UNITED STATES DEPARTMENT OF COMMERCE
OFFICE OF TECHNICAL SERVICES

BIBLIOGRAPHY OF SCIENTIFIC AND INDUSTRIAL REPORTS

Vol. 8 *February 6, 1948* No. 6

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*Indicates that reports in the BIOS, CIOS and FIAT series are deposited in the Library of Congress Depository Libraries. For a complete list of these libraries, see page facing page 1, volume 5, of this Bibliography.

In addition to the indexes described on the back cover of this Bibliography, the Office of Technical Services has published the following reference works:

PB L 81500. HOLLOWAY, O. WILLARD and ISAAC, OLIVER B. Classified list of OTS printed reports: A list of reports on German and Japanese technology, prepared by American investigators, which are available in printed form from the Office of Technical Services. Oct 1947. 59 p. Price: 75¢

PB L 78000. LOWRY, W. KENNETH. OSRD reports: Bibliography and index of declassified reports having OSRD numbers. Jun 1947. 105 p. Price: 75¢

PB L 58101-R. SWIFT, GRACE. Government document series, analyzed by Office of Technical Services. Rev. Nov 1947. 45 p. Price: 25¢

PB L 79322. SWIFT, GRACE and ORNE, JEROLD. Subject headings for technical libraries. Jun 1947. 167 p. Price: $1.50

PB L 81803. U. S. OFFICE OF TECHNICAL SERVICES, TECHNICAL INDUSTRIAL INTELLIGENCE DIVISION. Reports resulting from the investigation of German technology, 1945-1946, and index of personnel. May 1947. 207 p. Price: $5.25

Dyes

PB L 25641. I. G. FARBENINDUSTRIE. Reports concerning dyes. (FIAT Microfilm Reel C 84 (Frames 1-188) 16 mm microfilm) 1944-1945. 188 f. Price: Microfilm-$2.75 - Enlargement print-$19.00

The 151 individual items of this FIAT microfilm reel are listed below. They will be available as enlargement prints. Please give the above PB number and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
	Hoechst:	
1 PB L 25641	"Leuchtblau" marking paste. In German.	$1.50
2 PB L 25641	"Medialan" AT conc.; "Emulphor" APM; "Protektol" MT; "Blasplit" filler solution. In German.	1.50
3 PB L 25641	Wetting agent for leather Hoe 1/191 softener for hides and pelts Hoe 1/192. In German.	1.50
4 PB L 25641	Solvent E 13. In German.	1.50
5 PB L 25641	"Indanthrendruckbraun" "TMI Suprafix" Paste No. 1745. In German.	1.50
6 PB L 25641	"Intravan" CK. In German.	1.50
7 PB L 25641	Plasticiser for rayon and cellulose wool Hoe 1/131 new and Hoe 1/131 A new. In German.	1.50
8 PB L 25641	Pigment dyes for pigment printing of textiles. Pink-brown-green-black. In German.	1.50
9 PB L 25641	Softener and pretreating agent Hoe 1/183. In German.	1.50
10 PB L 25641	Leather oil 51141 a. In German.	1.50
11 PB L 25641	"Naphtazinbraun BTL." In German.	1.50
12 PB L 25641	Stencil lacquer N colorless. Hardening agent NA. Covering lacquer N. Stencil Blue N. In German.	1.50
13 PB L 25641	Chrome Mordant MO. In German.	1.50
14-15 PB L 25641	Detergent Hoe 1/152. In German.	1.50
16 PB L 25641	Detergent Hoe 1/151. In German.	1.50
	Leverkusen:	
17 PB L 25641	Shading dye - Military gray 44. In German.	1.50
18-19 PB L 25641	Half-wool dye PLU. In German.	1.50
20 PB L 25641	"Desmophen V-Polyester J 27." In German.	1.50
21-22 PB L 25641	Detergent raw material UL5. In German.	1.50
23 PB L 25641	"Polystal IU" red. In German.	1.50
24 PB L 25641	"Desmophen 1400 A" and "1400 B." In German.	1.50
25 PB L 25641	"Indocrania RRF." In German.	1.50
26 PB L 25641	I. G. wax JV 1. In German.	1.50
27 PB L 25641	"Lenzer E" approximately 30%. In German.	1.50
28 PB L 25641	"Oranenthrol 3 GO." In German.	1.50
29 PB L 25641	"Halbwollechtschwarz HA." In German.	1.50
30 PB L 25641	"Halb-Brilliantcerania B/H 19020." In German.	1.50
31-32 PB L 25641	"32 2 201 Halbwollmatschrosbraun B"; "31 2 066 Halbwollbraun GB"; "31 2 011 Cotolanbraun R (H 19 0 52)". In German.	1.50
33 PB L 25641	"Corapal H" synthetic resin 94. In German.	1.50
34 PB L 25641	"Benzolichtbraun 3THK" extra. In German.	1.50
35 PB L 25641	"Halbwollmarineblau 31240." In German.	1.50
36 PB L 25641	"Universalcrusen C/H 19014." In German.	1.50
37 PB L 25641	Leather oil La-Hoe 2/55. In German.	1.50
38 PB L 25641	"Corapal H." In German.	1.50
39 PB L 25641	"Kunstseidenlichtschwarz CG" conc./H 19104, new H 19002. In German.	1.50
40 PB L 25641	"Halbwollcrusen H 19092." In German.	1.50
	Ludwigshafen and Oppau:	
41 PB L 25641	"Lavatin BO" conc. 44. In German.	1.50
42 PB L 25641	"Lupheo OH" appr. 60% in butanol. In German.	1.50
43 PB L 25641	Sebacic acid, technical. In German.	1.50
44 PB L 25641	"Persistol H." In German.	1.50
45-55 PB L 25641	Tetraethanolammoniumsterosals: Preparation MD: "Soromin FL": "Cyclanon" preliminary product: "Lupheo K 75 - Lurapal K 75": "Lupheo K 150 - Lurapal K 150": Phenol resin 100% (Bar.): "Solutionasals CH": "Tamol F": Plasticiser Lu 303: "Trilon A" liquid. In German.	1.50
56 PB L 25641	Synthetic resin APH (Hüls). In German.	1.50
57 PB L 25641	"Glycinal HD 2." In German.	1.50
58 PB L 25641	Pretreating agent VDSS.Ca. In German.	1.50
59 PB L 25641	"Baceblau GG." In German.	1.50
60 PB L 25641	"Glycinal HD 2 (Lu)." In German.	1.50

Dyes (contd)

61 PB L 25641 "Lanapal K 75" and "K 150/Lanaben K." In German. 1.50

62 PB L 25641 "Lavantin HW" conc. 44 new. In German. 1.50

63-66 PB L 25641 "Carialscharlach L" type F and type S, L, L type A. In German. 1.50

67 PB L 25641 "Rapidschwarz H." In German. 1.50

68 PB L 25641 "Lanaben H." In German. 1.50

69-78 PB L 25641 "Lavantin BL" conc. 44; "Trilon B"; "Lavantin BL" conc.; Impregnating agent T conc.; "Eulysin B" conc.; "Trilon BX" conc.; Detergent 102 highly conc.; Detergent 102 a highly conc.; "Oxamin WR" conc.; "Alipon OB" paste 60%. In German. 1.50

79 PB L 25641 "Acrasol 250 D" amor. 40% / "Acrasol 250 D" new. amor. 40%. In German. 1.50

80 PB L 25641 "Igamid B.Band WD." In German. 1.50

81 PB L 25641 Diluent B. In German. 1.50

82-83 PB L 25641 Hydrophobing agent 1144/0 ("Persitol B"). In German. 1.50

84-87 PB L 25641 Monostearic ester of triethanolamine: "Soromin AF" 100%; "Soromin AFZ"; "Soromin FL"; "Soromin FLO". In German. 1.50

88-90 PB L 25641 "Carialscharlach L." In German. 1.50

91 PB L 25641 Amphe soap 18. In German. 1.50

92 PB L 25641 Detergent LN for polis. In German. 1.50

93 PB L 25641 "Igepal NA" conc. paste. In German. 1.50

94 PB L 25641 "Igepal NA" conc. powder. In German. 1.50

95 PB L 25641 "Igepal NA" powder. In German. 1.50

96 PB L 25641 "Cyclanon L." In German. 1.50

97 PB L 25641 "Cyclanon LA". In German. 1.50

98 PB L 25641 "Cyclanon LA" cond. paste. In Germn. 1.50

99 PB L 25641 "Cyclanon WBM" double conc. In German. 1.50

100 PB L 25641 "Cyclanon WBL." In German. 1.50

101 PB L 25641 "Dermisol B." In German. 1.50

102 PB L 25641 "Lavantin BL" conc. In German. 1.50

103 PB L 25641 "Lavantin HWM." In German. 1.50

104 PB L 25641 "Lavantin HW". In German. 1.50

105 PB L 25641 "Lavantin HW" conc. In German. 1.50

106 PB L 25641 "Lavantin KB" conc. In German. 1.50

107 PB L 25641 "Kalunit A" powder. In German. 1.50

108 PB L 25641 "Kalunit A" paste. In German. 1.50

109 PB L 25641 "Kalunit A" liquid. In German. 1.50

110 PB L 25641 "Dermolan D." In German. 1.50

111 PB L 25641 "Trilon AW" liquid. In German. 1.50

112 PB L 25641 "Leonil FFH." In German. 1.50

113 PB L 25641 "Leonil FFO" extra. In German. 1.50

114 PB L 25641 "Leonil FFO" solution. In German. 1.50

115 PB L 25641 "Leonil FFOS" extra. In German. 1.50

116 PB L 25641 "Hekal AEM." In German. 1.50

117 PB L 25641 "Hekal BO." In German. 1.50

118 PB L 25641 "Hekal BX" extra. In German. 1.50

119 PB L 25641 "Hekal BX" dry. In German. 1.50

120 PB L 25641 "Hekal BX" extra strong. In German. 1.50

121 PB L 25641 "Hekal BXS" paste. In German. 1.50

122 PB L 25641 "Hekallosung BXS" conc. In German. 1.50

123 PB L 25641 "Ludorit" extra. In German. 1.50

124 PB L 25641 "Lenocal" liquid. In German. 1.50

125 PB L 25641 "Lenocal AL" liquid. In German. 1.50

126 PB L 25641 "Leonil H" extra. In German. 1.50

127 PB L 25641 "Leonil LN". In German. 1.50

128 PB L 25641 "Leonil S." In German. 1.50

129 PB L 25641 "Leonil SB." In German. 1.50

130 PB L 25641 "Leonil SBS" paste, highly conc. In German. 1.50

131 PB L 25641 "Leophen BN." In German. 1.50

132 PB L 25641 "Leophen BN" highly conc. In German. 1.50

133 PB L 25641 "Leophen S." In German. 1.50

134 PB L 25641 "Emulphor A" soluble in oil. In German. 1.50

135 PB L 25641 "Emulphor EL." In German. 1.50

Dyes (contd)

136 PB L 25641 "Emulphor FM" soluble in oil. In German. 1.50

137 PB L 25641 "Emulphor O" (type 11310). In German. 1.50

138 PB L 25641 "Emulphor OL" solution. In German. 1.50

139 PB L 25641 "Diazopon FFA" highly conc. In German. 1.50

140 PB L 25641 "Diazopon A." In German. 1.50

141 PB L 25641 "Diazopon A" highly conc. In German. 1.50

142 PB L 25641 "Palatinechtsalz O" in solution. In German. 1.50

143 PB L 25641 "Solutionssalz CH." In German. 1.50

144 PB L 25641 "Peregal OK" highly conc. In German. 1.50

145 PB L 25641 "Peregal OK" conc. In German. 1.50

146 PB L 25641 "Benaphtol AS." In German. 1.50

147 PB L 25641 "Collorosin V" extra. In German. 1.50

148 PB L 25641 "Lumitol S" new. In German. 1.50

149 PB L 25641 "Appretan A." In German. 1.50

150 PB L 25641 "Appretan B." In German. 1.50

151 PB L 25641 "Appretan G I." In German. 1.50

152 PB L 25641 "Appretan G II." In German. 1.50

153 PB L 25641 "Appretan P." In German. 1.50

154 PB L 25641 "Appretan WL." In German. 1.50

155 PB L 25641 "Appretan WL" conc. In German. 1.50

156 PB L 25641 "Appretan WL" highly viscous. In German. 1.50

157 PB L 25641 "Appretan Z." In German. 1.50

158 PB L 25641 "Soromin A." In German. 1.50

159 PB L 25641 "Soromin A" base 30%. In German. 1.50

160 PB L 25641 "Soromin N" powder. In German. 1.50

161 PB L 25641 "Soromin SO" 50%. In German. 1.50

162 PB L 25641 "Soromin SO" 100%. In German. 1.50

163 PB L 25641 "Kaurit KF" paste. In German. 1.50

164 PB L 25641 "Mattierung S" 50%. In German. 1.50

165 PB L 25641 "Mattierung W 7" fine lamellar. In German. 1.50

166 PB L 25641 "Spinnmattweiss CH." In German. 1.50

167 PB L 25641 "Katalysator P I." In German. 1.50

168 PB L 25641 "Katalysator P II." In German. 1.50

169 PB L 25641 "I. G. Wache A." In German. 1.50

170 PB L 25641 "Emulsionswache EMW." In German. 1.50

171 PB L 25641 "Eulysin A." In German. 1.50

172 PB L 25641 "Eulysin A" conc. In German. 1.50

173 PB L 25641 "Ludigol." In German. 1.50

174 PB L 25641 "Ludigol E." In German. 1.50

175 PB L 25641 "Ludigol S." In German. 1.50

176 PB L 25641 Special plasticizer making resistant to creasing. In German. 1.50

177 PB L 25641 "Spezialavivage O." In German. 1.50

178 PB L 25641 "Ramasit KOTL" conc. In German. 1.50

179 PB L 25641 "Eulysin B" conc. 44. In German. 1.50

180-181 PB L 25641 "55 2 404 Naphthylviolett 2BM" powder "12 0 462 Viktoriabraun 24714." In German. 1.50

Mainkur:

182-186 PB L 25641 "Immedialsolbraun 44716": Immedialsolgrau 2133 (Misch. 44702)": "Immedialorange R" extra: "Immedialrotbraun 6R" extra conc.: -d-highly conc. "O Immedialsolgrau 2039" mixed. No. 44011: "Immedialechtfeldgrau WL." In German. 1.50

Wolfen:

187-188 "Sudangelb 1437 : Japanbraun 26 999." In German. 1.50

PB L 25632. I. G. FARBENINDUSTRIE A. G. Reports of the meetings of the Scientific Commission on alizarin and vat dyes. (FIAT Microfilm Reel C 192, Frames 1-599) 1932-1940. 619 f. Price: Microfilm-$6.00 - Enlargement print-$62.00

This reel consists of 30 reports presented at the sessions of the I. G. Scientific Commission. These reports contain technical information on the dyes and intermediates, tests of the products and on patent applications relating to the products. An index to these reports (PB 58966) gives the German titles with their English translations. Individual items are listed below and will be available as enlargement prints only. The entire reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

PB Number Frames	Title	Price
	Alizarin and vat dyes 1932-33.	
L 58939 Frames 1-23	The activities of Scientific Commission 9 in the year 1932. In German.	$2.00

Dyes (contd)

L 58940 Frames 24-77 — Report on the progress achieved by the Scientific Commission for alizarin and vatting (Wissko 9) in the year 1933. In German. 4.00

L 58941 Frames 78-124 — Report on scientific work in the field of Commission 9 in the year 1934. In German. 4.00

Alizarin and vat dyes 1934-1936.

30th session of the Scientific Commission for Alizarin and Vat Dyes, Feb. 6, 1934.

L 58942 Frames 125-135 — New patent applications of individual factories. In German. 1.00

L 58943 Frames 136-148 — New reports from individual plants. In German. 1.00

L 58944 Frames 149-160 — Consultation on dyes still in the development state. In German. 1.00

L 58945 Frames 1604-163 — Testing of new products. In German. 1.00

L 58946 Frames 164-170 — Vat dyes; intermediate products; acid wool dyes; miscellaneous. In German. 1.00

31st session of the Scientific Commission for Alizarin and Vat Dyes, June 20, 1934 and July 17, 1934.

L 58947 Frames 171-182 — Acid wool dyes; vat dyes and indigosols; substantive acetate rayon dyes, and various others; intermediate products. In German. 1.00

L 58948 Frames 183-216 — New patent applications from individual works and from outside collaborators. In German. 3.00

L 58949 Frames 217-246 — New reports from the individual works. In German. 2.00

L 58950 Frames 247-249 — Testing of new products. In German. 1.00

L 58951 Frames 250-258 — Indigosol problems. In German. 1.00

32nd session of the Scientific Commission for Alizarin and Vat Dyes. Nov. 9, 1934 and Nov. 20, 1934.

L 58952 Frames 259-263 — Vat dyes. In German. 1.00

L 58953 Frames 264-271 — Acid wool dyes; chrome developed dyes; substantive dyes; pigment and acetate rayon dyes; intermediate products; miscellaneous. In German. 1.00

L 58954 Frames 272-314 — New patent applications from individual works and from outside collaborators. In German. 3.00

L 58955 Frames 315-359A — Reports from individual works. In German. 4.00

L 60638 Frames 360-365 — Testing of new products. In German. 1.00

33rd session of the Scientific Commission for Alizarin and Vat Dyes. March 29, 1935 and May 24, 1935.

L 58956 Frames 366-370 — Acid wool, silk and chrome-developed dyes; vat dyes and indigosols; acetate rayon dyes, intermediate products and miscellaneous. In German. 1.00

L 58957 Frames 378-407 — New patent applications from individual works and from outside collaborators. In German. 2.00

L 58958 Frames 407A-452 — Green wool dyes from 1,4-dichloranthraquinone carboxylic acids. In German. 4.00

L 58959 Frames 453-457 — Testing of new products. In German. 1.00

34th session of the Scientific Commission for Alizarin and Vat Dyes. Oct. 25/26, 1935.

L 58960 Frames 458-463 — Report of the minutes of the 34th session of the Scientific Commission for Alizarin and Vat Dyes. In German. 1.00

L 58961 Frames 464-475 — Vat dyes. In German. 1.00

L 58962 Frames 476-484A — Acid, wool and chrome-developed dyes; substantive dyes; acetate rayon and pigment dyes; intermediate products; miscellaneous. In German. 1.00

L 58963 Frames 485-516 — New patent applications from individual works. In German. 3.00

L 58965 Frames 517-570 — New reports from the individual works. In German. 4.00

L 58964 Frames 571-573 — Testing of the new products. In German. 1.00

Alizarin and vat dyes 1936-1940.

Minutes of session of the Commission for Alizarin and Vat Dyes.

L 60640 Frames 574-599 — Chemical and technical progress in manufacture: Frankfurt am Main, Feb. 15, 1940; Hoechst am Main, Oct 14, 1938; Mainkur, Oct. 1, 1937; Leverkusen, June 19, 1936. In German. 2.00

L 58966 — Reports of the meetings of the Scientific Commission on alizarin and vat dyes, 1932-1940. Index. 1.00

PB L 25617. I. G. FARBENINDUSTRIE A. G. Semi-annual reports for the use of the I. G. representatives. (FIAT) Microfilm Reel C 173, Frames 1-884) Mar 1946. 884 f. Price: Microfilm-$6.00 - Enlargement print-$88.50

This FIAT microfilm reel contains reports concerning dyes. Individual items are listed below. They will be available as enlargement prints only; the entire reel may be purchased in microfilm form. Please give the above PB number and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
1-330 PB L 25617	I. Semiannual reports (Sept. 1937-Dec. 1942) of the I. G. Farbenindustrie A. G. Coloring Department (cotton, rayon, silk), for the use by	

Dyes (contd)

I. G. representatives. In German. $35.00
These reports give a survey of new dyes and dyeing aids produced by the I. G. and competitors, as well as an exchange of experiences by customers, suggestions to overcome difficulties in special cases, new formulas and amendments of prescriptions for using dyes. Test tables are included.

[illegible]
PB L 25617 II. Semiannual reports (May 1937-May 1941) of the I. G. Farbenindustrie A. G. Wool Dyeing Department, for the use by representatives. In German. 15.00
These reports give a similar survey of new dyes and dyeing aids produced by the I. G. and competitors as given in Part I.

[illegible]
PB L 25617 III. Semiannual reports (1936-1941) of the I. G. Farbenindustrie A. G. Printing Department, for the use by I. G. representatives. In German. $41.00
They give details of the most recent developments in this field, for example new printing dyes, appliances and machines. Some items are only of slight interest in that they deal with substitutes necessitated by war or shortage of raw materials.

Plastics and Plasticizers

PB L 73586. DOCUMENTS CENTER, GRIESHEIM, GERMANY. Research reports in plastics and other chemicals. (FIAT Microfilm Reel F-213, Frames 5780-6709) 1936-1943. 929 f. Price: Microfilm-$6.00 - Enlargement print-$93.00
This reel was prepared by FIAT investigators in Germany. 68 individual items are listed below and will be available as enlargement prints. The entire reel may be purchased as a microfilm for $6.00. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
5780-5788 PB L 73586	Detection of traces of hydrocyanic acid in plant waste waters. By Schuhknecht. Jul 3, 1939. In German.	$1.50
5789-5797 PB L 73586	Experiment on the hydrolytic separation of "Igelit- PCU". By Schuhknecht. May 14, 1941. In German.	1.50
5798-5801 PB L 73586	Dry-resonator for use in laboratories. By Schuetze. Feb 22, 1938. In German.	1.50
5802-5813 PB L 73586	The analysis of mixtures from ammonia, mono -, di-, and trimethylamine. By Wurzschnitt and Dr. Kerckow. Jan 26, 1940. In German.	1.50
5814-5820 PB L 73586	Corrosion of aluminum by formaldehyde solutions. By Wurzschmitt, Jan 19, 1937. In German.	1.50
5821-5855 PB L 73586	Simultaneous detection and determination of ortho-, meta-, and pyrophosphate. By Wurzschmitt and Schuhknecht. May 2, 1938. In German.	3.50
5856-5862 PB L 73586	The constitution of water-soluble calcium-compounds of "Trilon A" and "Ma 416". By Pfitzner and Valko. Jul 8, 1937. In German.	1.50
5863-5868 PB L 73586	Crystallization experiments with urea. By Wurzschmitt and Zimmermann. Jul 29, 1937. In German.	1.50
5869-5875 PB L 73586	A new micro-analytic method for direct determination of oxygen in organic compounds by means of automatic cracking. By Zimmermann. Jun 15, 1937. In German.	1.50
5876-5884 PB L 73586	An exact volumetric-rapid determination of total sulfur in roasted pyrites (also in iron pyrites). By Zimmermann. Mar 2, 1943. In German.	1.50
5885-5906 PB L 73586	A micro-analytic rapid-determination of sulfur in inorganic and organic substances. By Zimmermann. Oct 1, 1942. In German.	3.50
5907-5926 PB L 73586	Iodometric determination of hydroxides in the presence of carbonates. By Wurzschmitt and others. Jun 5, 1942. In German.	2.00
5927-5968 PB L 73586	Alternate methods for iodometry. 1940. In German.	4.50
5969-5984 PB L 73586	Influence of the polymerization conditions on the course of polymerization and the properties of Igelit. By Pikentscher. Apr 22, 1940. In German.	2.00
5985-5994 PB L 73586	Drying of Igelit suspensions. By Heidebrock. n.d. In German.	1.50
5995-6001 PB L 73586	Data for the construction of a continuous chlorination apparatus for "PCU". By Szika. Apr 28, 1942. In German.	1.50
6003-6009 PB L 73586	Inspection of the Hubiloss-plant at Bitterfeld. By Hilers. May 18, 1942. In German.	1.50
6010 PB L 73586	1 page with business notes concerning the demand of material for Igelit PCU. Sep 14, 1942. In German.	1.50
6011-6011A PB L 73586	Determination of the "K-value" of Igelit PCU. Sep 14, 1942. In German.	1.50
6012 PB L 73586	Determination of the "K-value." Sep 14, 1942. In German.	1.50
6013 PB L 73586	Determination of the heat deformation. Sep 14, 1942. In German.	1.50
6014-6015 PB L 73586	Visit at the IX-section, Ludwigshafen. In German.	1.50
6016-6059 PB L 73586	Stability measurement of "Igelit PCU" by means of electrical and optical methods. By Wolf. Jun 12, 1943. In German.	4.50
6060 PB L 73586	2,4-dichlorobenzoic acid. Nov 20, 1942. In German.	1.50
6061-6072 PB L 73586	Co-polymerization products high in vinyl ether content. By Pikentscher and Orth. Feb 23, 1939. In German.	1.50
6073-6084 PB L 73586	Co-polymerization of vinyl chloride and vinyl butyl ether. By Pikentscher and Orth. May 17, 1939. In German.	1.50
6085-6095 PB L 73586	Polymerization of the methacrylic amide. By Pikentscher and Hagen. Mar 31, 1937. In German.	1.50

6096-6102 PB L 73586 — Softening agent "BXX." By Pikentscher and Hagen. Sep 8, 1937. In German. 1.50

6103-6107 PB L 73586 — State of the studies in the polystyrene "[illegible]field. By Freytag. Feb 14, 1938. In German. 1.50

6108-6113 PB L 73586 — Preparation of glutaric acid. By Haussmann and Gräfinger. Apr 19, 1939. In German. 1.50

6114-6119 PB L 73586 — Technical preparation of cyclopentanone from adipic acid. By Hopff and Böttcher. Apr 16, 1937. In German. 1.50

6120-6122 PB L 73586 — New co-polymerization products from fumaric esters. By Hopff and Steinbrunn. Mar 31, 1937. In German. 1.50

6123-6129 PB L 73586 — "Luvimals", a new class of celluloid-like vinyl chloride copolymerization products. By Hoff and Steinbrunn. Feb 11, 1937. In German. 1.50

6130-6136 PB L 73586 — Selective hydrogenation of vinyl acetylene to butadiene by means of zinc dust and alkali solution. By Reppe. Jan 14, 1938. In German. 1.50

6137-6145 PB L 73586 — A new way to butadiene and other dienes from acetylene and aldehydes or ketones. By Reppe. Jan 14, 1938. In German. 1.50

6146-6155 PB L 73586 — See frames No. 6137-45. In German. 1.50

6156-6157 PB L 73586 — Propargyl alcohol and "Butindol" as pickling additions. By Schaaf. Jul 15, 1939. In German. 1.50

6158-6161 PB L 73586 — Preparation of compounds containing amido and amino groups and their application for animalization. By Schmidt and Mattauch. Feb 4, 1938. In German. 1.50

6162-6166 PB L 73586 — Preparation of amines from paraffin oxidation fatty acids. By Schmidt and Mattauch. Feb 22, 1938. In German. 1.50

6167-6173 PB L 73586 — Condensation products from crotonaldehyde. By Thewald and Schmidt. Apr 14, 1937. In German. 1.50

6174-6178 PB L 73586 — Coal pressure extract. By Schuster and Jansen. Apr 16, 1937. In German. 1.50

6179-6183 PB L 73586 — Experiments on the preparation of nitric acid from ammonium sulfate. By Pätsch. Dec 3, 1937. In German. 1.50

6184-6192 PB L 73586 — Experiments for the preparation of elemental sulfur from roasting gases. By W. Just. Oct 29, 1937. In German. 1.50

6193-6209 PB L 73586 — Some informatory experiments concerning the absorption of SO_2 from roasting gases in aqueous solutions. By H. Wolf. Mar 3, 1937. In German. 2.00

6210-6220 PB L 73586 — Separation of mixtures of sulfur dioxide and hydrogen chloride. By W. Eckardt. Aug 2, 1937. In German. 1.50

6221-6232 PB L 73586 — Sulfur from sulfur dioxide. By A. Wolf. May 10, 1937. In German. 1.50

6233-6237 PB L 73586 — Some experiments for the preparation of sulfur dioxide by absorption. By W. Haufe. Jun 13, 1937. In German. 1.50

6238-6247 PB L 73586 — New experiments for the preparation of chlorine from hydrogen chloride and oxygen (Deacon-process). By W. Mann. Apr 29, 1938. In German. 1.50

6248-6260 PB L 73586 — Preparation of liquid sulfur trioxide from sulfur dioxide and oxygen by the catalyst process. By W. Adam and W. Mann. Apr 21, 1938. In German. 1.50

6261-6268 PB L 73586 — Preparation of sulfur from gypsum. By Adam. Apr 30, 1938. In German. 1.50

6269-6280 PB L 73586 — Sodium sulfide-analogue process. By Wintersberger. Jun 7, 1938. In German. 1.50

6281-6288 PB L 73586 — Preparation of sulfur from gypsum. By Weber. Jun 11, 1938. In German. 1.50

6289-6302 PB L 73586 — Experiments for the utilization of soda slag. By Bauermeister. Jun 22, 1938. In German. 1.50

6303-6320 PB L 73586 — Preparation of concentrated sulfur dioxide from roasting gas by means of basic aluminum chloride solutions. By Baumeister and Haufe. Aug 24, 1938. In German. 2.00

6321-6332 PB L 73586 — Removal of hydrogen from chlorine. By Mann. Aug 18, 1938. In German. 1.50

6333-6342 PB L 73586 — Mechanism of the sulfur addition in the technical performance of the reaction : $S + 2\ SO_3 = 3SO_2$. By Zimmermann. Nov 12, 1938. In German. 1.50

6343-6354 PB L 73586 — Experiments for the preparation of elemental sulfur from pyrite by direct resistance heating. By W. Müller. Dec 16, 1938. In German. 1.50

6355-6367 PB L 73586 — Adsorption of sulfur dioxide from roasting gases with zinc oxide and water. By W. Kilberer. Jul 6, 1939. In German. 1.50

6368-6378 PB L 73586 — Distillation experiences and supplementary experiments for the concentration of sulfuric acid. By Lüder. n.d. In German. 1.50

6379-6386 PB L 73586 — Experiments with bauxites for the catalytic preparation of isobutylene from isobutanol and trimethyl carbinol. By Küspert. Mar 11, 1937. In German. 1.50

6387-6394 PB L 73586 — Report on the vinylacetylene hydrogenation by means of zinc dust. By Rothhaas. Jul 29, 1937. In German. 1.50

6395-6398 PB L 73586 — Cost problem concerning the catalyst-regeneration in the reduction of vinyl-acetylene to butadiene. Apr 9, 1937. In German. 1.50

6399-6404 PB L 73586 — Reports on the hydrogenation of vinylacetylene by means of alkali and zinc amalgam. By Rothaas. Jul 1937. In German. 1.50

6405-6425 PB L 73586 — Acetaldehyde from acetylene by way of vinylmethyl ether. By W. Reppe. Oct 13, 1937. In German. 2.50

6426-6432 PB L 73586 — Preparation of solidifying point reducers on a sperm oil alcohol basis. By Ufer. Dec 14, 1937. In German. 1.50

6433-6447 PB L 73586 — Preparation of propargyl alcohol and its re-application in the butynediol synthesis. By Keyhser and Eichler. Jun 10, 1939. In German. 1.50

6448-6653 PB L 73586 — Former studies of the ZK laboratory in the field of polyamides. By Ufer. 1938. In German. 1.50

6654-6694 PB L 73586 — Calculating tables for ammonia refrigerating plants. Dec 1, 1936. In German. 4.50

6695-6709 PB L 73586 — Stirring experiments with a 200 m3 cylinder in the salt dissolving plant. Sep 17, 1937. In German. 1.50

PB L 73586-S. DOCUMENTS CENTER, GRIESHEIM, GERMANY. Research reports in plastics and other chemicals. (FIAT Microfilm Reel F 213, Frames 5780-6709, abstract cards) 1936-1943 72 p. Price: Microfilm-$2.00 Enlargement print-$5.00.
Brief abstracts of the individual items on the above reel, F 213, prepared by FIAT personnel in Germany.

PB L 85429. ELLIOTT, MYRON A. and others. Dielectric identity test for plasticizers: Polyvinyl chloride plastics type. Jan 1947. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00
A new type of cell and method are described for the rapid determination of the dielectric properties of small samples of plasticizers as a function of temperature. Since these materials have characteristic loss factor-temperature curves that are sensitive to contamination by significant amounts of practically any foreign material, such dielectric data are valuable as an identity or acceptance test. Although the procedure has been applied to some plasticizers in particular, it may be used on nearly all electrically polar organic liquids. The method involves the extraction of a small quantity of the plasticizer from a resin and then the determination of the electrical properties of this plasticizer at a frequency of 10 Mc. as a function of temperature. Each type of plasticizer gave a reproducible curve different from that of the others. Simple qualitative chemical tests were found valuable for confirmation purposes on some types of plasticizers. Refractive index determinations gave useful supplemental information. Reprinted from Analytical Edition, Industrial and Engineering Chemistry, Jan. 15, 1947.

PB L 44965-S. HORN, HEINZ. The production of styroflex film. (Supplement to PB 44965). (FIAT Final Rept 870, Addendum). Aug 1947. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
This report is a supplement to PB 44965, vol. 4, p. 754, this Bibliography, and contains additional information concerning Styroflex film. This concerns the molecular weights of the polymer used and of the film itself and the production of special films.

PB L 85781. LÖFFLER, KARL. Ether carboxylic acid esters as plasticizers for igelit synthetic rubber. (AAF T-2 Translation 1036). Nov 1946. 11 p. Price: Microfilm-$1.25 - Photostat-$2.00
Besides esters derived from Phtalic acids, the esters from stearic acids are used, as softening agents for Igelite. Their good properties are particularly outstanding for their cold-resistivity. Several esters and their characteristics are described. The best combination is the Butoxy-acetic acid-thiodiglycol ester, which is known to the trade as Mollit BG and produced in quantities of 3 to 4 tons monthly.

PB L 85776. LÖFFLER, KARL. The water absorption of thin igelit-foils; a contribution to the manufacture of a polyvinylchloride suitable for the coating of black iron plate. (AAF T-2 Translation 1011h). Dec 1946. 8 p. Price: Microfilm-$1.00 - Photostat-$1.00
Polyvinylchloride, called Igelit PCU, compares unfavorably with Vinnol HH and American Koroseal, due to its high water absorption. A new method for production of waterproof polyvinylchloride was devised, consisting in washing out Igelit PCU type GH with hot water or Methanol. Polyvinylchloride obtained has technical properties comparable to Vinnol HH.

PB L 42802-S. MYERS, FREDERICK J. Additional information from I. G. Farbenindustrie. (Supplement to his Ion exchanges, coatings and plywood resins at I. G. Farbenindustrie, Th. Goldschmidt A. G., Permutit A. G. and Chemische Werke Albert, PB 42802). (FIAT Final Rept 715, Addendum). Oct 1946. 19 p. Price: Mimeo-$0.50
This report supplements PB 42802, vol. 3, p. 313, this Bibliography, and contains the following data: (a) plant methods for the preparation of alkydal TT Special, RD 18, ST, T-100%, TT, and L-100%; (b) complete directions for the commercial manufacture of Membranit (similar to so-called "water paints" in the U.S.); (c) directions for the use of Kaurit glue powder (a urea formaldehyde resin) as well as for the production and use of foamed urea glues; and (d) detailed directions for the use of Polystal U, a two-component adhesive based on an adipic alkyd and isocyanate.

PB L 85780. ORTH. Apparatus for determining metallic potassium content in potassium-raw plasticizer 32 produced by a continuous process. (AAF T-2 Translation 1019). Jan 1947. 7 p. Price: Microfilm-$1.00 - Photostat-$1.00
Polymerization of butadiene to plasticizer 32 according to continuous spiral process takes place with use of metallic potassium as activator. Vinyl chlorine is added as regulator at polymerization. Results of examination are given. Laboratory apparatus for determining metallic potassium content is described.

PB L 85803. U. S. DAVID W. TAYLOR MODEL BASIN, CARDEROCK, MD. Compression tests of "Formica grade HM" and "Formica grade R." (Rept R-74). Nov 1942. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
Two plastic sheets approximately 1/8 inch thick submitted by the equipment and Material Section of the Bureau of Aeronautics were tested at the David W. Taylor Model Basin for compressive stress-strain characteristics and density. The plastic sheets were of two types, referred to as Formica Grade HM, and Formica Grade R, respectively. The specimens and test procedure is described and results given. The compression tests are graphically presented.

PB L 73423. WACKER, ALEXANDER, G.M.B.H., MUNICH, GERMANY. Organic preparations and plastics. (FIAT Microfilm Reel K 112, Frames 2592-3028). 1943 - 1946. 437 f. Price: Microfilm-$5.25 - Enlargement Print-$44.00.

Plastics and Plasticizers (contd)
This reel was prepared by FIAT investigators in Germany. 64 individual items are listed below and will be available as enlargement prints. The entire reel may be purchased as a microfilm for $5.25. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
2592 - 2611 PB L 73423	Production of C6-aldehydes for hexyl alcohol. By Kopp. May 18, 1943. In German. Incomplete.	$2.00
2612 - 2623 PB L 73423	Laboratory work of section "R", group "RE" for April 1943. (Monthly report). By Nickl. Apr 29, 1943. In German.	1.50
2624 - 2635 PB L 73423	Monthly laboratory report of section "S" for April and May 1943. Investigations on "tetra last runnings". Jun 16, 1943. In German.	1.50
2636 - 2652 PB L 73423	Laboratory research by section "R", group "RE", during May 1943. By Nickl and Kamler. Jun 25, 1943 - Jun 28, 1943. In German.	2.00
2653 - 2659 PB L 73423	Monthly laboratory report of section "S" for June 1943. By Kellner. Jun 29, 1943. In German.	1.50
2660 - 2663 PB L 73423	Soft-rubber like "vinnols" (polyvinyl chloride). Jun 28, 1943. In German.	1.50
2664 - 2667 PB L 73423	Laboratory report of section "R", group "RE" for June 1943. By Kamler. Jul 22, 1943. In German.	1.50
2668 - 2675 PB L 73423	Monthly laboratory report of section "R", group "RE". (Laboratory report II). By Kurz. Jul 19, 1943. In German.	1.50
2676 - 2682 PB L 73423	"Vinna" tests with a "cooling-pocket reaction apparatus". By Behr. Jul 29, 1943. In German.	1.50
2683 - 2690 PB L 73423	Monthly laboratory report of section "S" for August 1943. Chlorinated butane derivatives (2.Report on "last runnings of tetra"). Sep 11, 1943. In German.	1.50
2691 - 2695 PB L 73423	Laboratory research by group "R", section "RE" in August 1943. Production of hydracetyl-acetone together with diacetone alcohol (mixed ketol). By Kamler. Sep 1, 1943. In German.	1.50
2696 - 2704 PB L 73423	Monthly laboratory report of section "S" for September 1943. By Kellner. Oct 14, 1943. In German.	1.50
2705 - 2715 PB L 73423	Monthly laboratory report of section "R", group "R/V" for September 1943. Increase of shrinkage resistance of fibers, bristles, and films from polyvinyl chloride, and an increase of the softening point. By Platzer. Oct 9, 1943. In German.	1.50
2716 - 2733 PB L 73423	Laboratory II report from July to September 1943. By Krug. Oct 20, 1943. In German.	2.00
2734 - 2750 PB L 73423	Report of the "Zolose" laboratory for July, August and September 1943. By Thoma. Oct 22, 1943. In German.	2.00
2751 - 2754 PB L 73423	Monthly laboratory report of section "S" for October 1943. Continuous production of sodium methylate from amalgam and methanol. Nov 17, 1943. In German.	1.50
2755 - 2760 PB L 73423	Increase of shrinkage resistance of fibers, bristles and films of polyvinyl chloride and the increase of their softening points (III. report). By Platzer. Dec 31, 1943. In German.	1.50
2761 - 2764 PB L 73423	Monthly report for December 1943 (Zolane" over "perester"). By Rost. Jan 18, 1944. In German.	1.50
2765 - 2779 PB L 73423	Laboratory investigations by section "R", group "RE" for November 1943. (Increase of quantity and yield in the aldol condensation). By Kopp. Dec 9, 1943. In German.	1.50
2780 - 2801 PB L 73423	Laboratory report for January 1944. action of filling material in "Drawirit" and "Vinnol". By Platzer. Mar 3, 1944. In German.	2.50
2802 - 2808 PB L 73423	Laboratory report for February 1944. Analysis of cable sheaths from American airplanes. By Waldmann. Mar 16, 1944. In German.	1.50
2809 - 2817 PB L 73423	Report of the DB-laboratory. "7-Aldol": Formation of residue and the application of buffer-solutions in "7-aldol" condensation. By Krug. Apr 12, 1944. In German.	1.50
2818 - 2832 PB L 73423	Laboratory research by section "R", group "RE" for April 1944. By Nickl. Apr 26, 1944. In German.	1.50
2833 - 2835 PB L 73423	Monthly laboratory report of section "S" for May 1944. Tests for producing sodium methylate under pressure. Jun 14, 1944. In German.	1.50
2836 - 2845 PB L 73423	Laboratory report for May 1944. (Vinylidene chloride). By Guggemos. Jun 10, 1944. In German.	1.50
2846 - 2856 PB L 73423	Monthly laboratory report for June 1944. Resistance to friction of soles made of polyvinyl chloride. In German.	1.50
2857 - 2865 PB L 73423	Laboratory research by section "R" group "RE", for August 1944. Production of ethoxy butyraldehyde and ethoxy butanol. By Kamler. Sep 13, 1944. In German.	1.50
2866 - 2868 PB L 73423	Laboratory report by section "R/V" for September 1944. Stability of "vinnol"-packings against organic acids. By Platzer. Oct 30, 1944. In German.	1.50
2869 - 2870 PB L 73423	Laboratory report for October 1944. Mixed polymerization of vinyl chloride-vinylidene chloride. By Guggemos. Apr 19, 1944. In German.	1.50
2871 - 2873 PB L 73423	Laboratory report of section "R/V" for November 1944. Plastification of softened polyvinyl chloride. By Platzer and Zigger. Dec 18, 1944. In German.	1.50

2874 - 2875 PB L 73423 Dehydracetic acid. By Guggemos. Dec 22, 1944. In German. 1.50

2876 - 2880 PB L 73423 Laboratory report for December 1944. Absorption of water by softened polyvinyl chloride. By Platzer. Jan 26, 1945. In German. 1.50

2881 - 2897 PB L 73423 Laboratory report of group R/V for December 1944. Preparation of a per-compound of crotonic acid. By Kiss. Jan 24, 1945. In German. 2.00

2898 - 2906 PB L 73423 Laboratory report for January 1945. Use of softened "Vinnol" for the production of water and acid hoses. By Platzer. Feb 2, 1945. In German. 1.50

2907 - 2908 PB L 73423 Laboratory report for January 1945. Drive belts of polyvinyl alcohol. By Platzer. Feb 12, 1945. In German. 1.50

2909 - 2912 PB L 73423 Laboratory report for February 1945. Experiments to produce "Vinnol" stabilizers. By Guggemos. Mar 21, 1945. In German. 1.50

2913 - 2928 PB L 73423 Laboratory research by section "R", group "RE", for February 1945. Aldol condensation of acetaldehyde with butyraldehyde. By Kamler. Apr 18, 1945. In German. 2.00

2929 - 2933 PB L 73423 Preparation of hydroxylamine sulfate. By Kamler. Jan 17, 1945. In German. 1.50
Frames 2930 and 2932 are damaged.

2934 - 2952 PB L 73423 Laboratory report for March 1945. "Hartvinnol" (hard "Vinnol"). By Platzer and Egger. Apr 28, 1945. In German. 2.00

2953 - 2954 PB L 73423 Monthly report of the "Hydrol" laboratory for March 1945. Removal of small quantities of mercury from hydrogen. Apr 11, 1945. In German. 1.50

2955 - 2958 PB L 73423 Laboratory report for April 1945. May 23, 1945. In German. 1.50

2959 - 2963 PB L 73423 Viscosity of acetyl cellulose according to different methods. By Thoma. Jun 23, 1945. In German. 1.50

2964 - 2967 PB L 73423 Production of cellulose triacetate from homogeneous acetylation mixtures. By Thoma. Jun 23, 1945. In German. 1.50

2968 PB L 73423 Spinning fibers from acetyl cellulose with an addition of "Vinnapas". By Thoma. Jun 23, 1945. In German. 1.50

2969 - 2972 PB L 73423 Production of zinc chloride free of calcium and sulfuric acid for the acetylation of cellulose. By Thoma. Jun 23, 1945. In German. 1.50

2973 - 2975 PB L 73423 Improvement of the properties of acetyl cellulose foil by after-treatment. By Thoma. Jun 23, 1945. In German. 1.50

2976 - 2982 PB L 73423 Acetylation with perchloric acid and zinc chloride as catalyst. By Thoma. Jun 23, 1945. In German. 1.50

2983 - 2985 PB L 73423 Laboratory report for June 1945. Polymerization tests with vinyl acetate-polyvinyl emulsions to finely dispersed emulsions (summarizing results of a test series with 150 g and 1.5 kg). By Gott. Jun 26, 1945. In German. 1.50

2986 - 2989 PB L 73423 Laboratory report for June 1945. Preparation of glycolic acid. By Guggemos. Jul 5, 1945. In German. 1.50

2990 - 2991 PB L 73423 Laboratory report for July 1945. Aug 16, 1945. In German. 1.50

2992 PB L 73423 Laboratory report; September 1945. Delay in polymerization when polymerizing vinyl chloride. By H. Reinecke. Oct 8, 1945. In German. 1.50

2993 - 2994 PB L 73423 Laboratory report; September 1945. By Egger. Oct 14, 1945. In German. 1.50

2995 PB L 73423 Laboratory report; September 1945. Stabilizers for "vinnol". Oct 4, 1945. In German. 1.50

2996 - 2997 PB L 73423 Laboratory report; September 1945. Tests for producing a finely dispersed "Vinnapas" emulsion. By Beer. Oct 5, 1945. In German. 1.50

2998 - 3000 PB L 73423 Laboratory report; October 1945. Preparation of glycolic acid. By Guggemos. Oct 12, 1945. In German. 1.50

3001 - 3002 PB L 73423 Laboratory report on the exchange in the polymerization of vinyl chloride. By H. Reinecke. Dec 12, 1945. In German. 1.50

3003 PB L 73423 Monthly report of section RL; November 1945. By Guggemos. Dec 7, 1945. In German. 1.50

3004 - 3005 PB L 73423 Monthly report of section RL; December 1945. By Guggemos. Jan 7, 1946. In German. 1.50

3006 PB L 73423 Laboratory report of section RL; Jan 1946. By Guggemos. Feb 6, 1946. In German. 1.50

3007 - 3011 PB L 73423 Laboratory report, group "RE". January 1946. Preliminary report concerning experiments for the production of acetic acid for food purposes without using permanganate. Jan 22, 1946. In German. 1.50

3012 PB L 73423 Laboratory report/section RL; February 1946. By Guggemos. n.d. In German. 1.50

3013 - 3021 PB L 73423 Laboratory report/March 1946. Production difficulties in the polymerization of vinyl chloride. By H. Reinecke. Apr 11, 1946. In German. 1.50

3022 - 3024 PB L 73423 Laboratory work by section "R", group "RE" for April 1946. Production of acetic acid for food purposes. By Wimmer. May 14, 1946. In German. 1.50

3025 - 3028 PB L 73423 Laboratory work by section "R", group "RE", for May 1946. Production of acetic acid for food purposes. By Wimmer. Jun 27, 1946. In German. 1.50

PB L 73423-S. WACKER, ALEXANDER, G.M.B.H., MUNICH, GERMANY. Organic preparations and plastics. (FIAT Microfilm Reel K 112, Frames 2592-3026, abstract cards) 1943-1946. 75 p. Price: Microfilm-$2.00 - Photostat-$5.00
Brief abstracts of the individual items on the above reel, K 112, PB 73423, prepared by FIAT personnel in Germany.

PB L 73424. WACKER, ALEXANDER, G.M.B.H., MUNICH, GERMANY. Reports in plastics and other synthetic substances. (FIAT Microfilm Reel K 121, Frames 8667-8786) 1940-1942. 119 f. Price: Microfilm-$2.00 - Enlargement print-$12.00
This reel was prepared by FIAT investigators in Germany. 34 individual items are listed below and will be available as enlargement prints. The entire reel may be purchased as a microfilm for $2.00. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
8667-8674 PB L 73424	Short reports for October-December 1940. By Treibs. Nov 22, 1940-Jan 25, 1941. In German.	$1.50
8675-8677 8690-8691 8697-8698 8707-8709 8713-8716 8734-8735 8739-8742 8752-8753 8759-8760 PB L 73424	Monthly short reports for January-December 1941. By Treibs. Feb 28, 1941-Jan 30, 1942. In German.	3.00
8678-8689 PB L 73424	These frames are damaged.	
8690-8691 PB L 73424	See frames 8675-8677.	
8692-8693 PB L 73424	Rapid determination of the water content in "polyviol" working pieces. Mar 26, 1941. In German.	1.50
8694-8696 PB L 73424	These frames are damaged.	
8697-8698 PB L 73424	See frames 8675-8677.	
8699 PB L 73424	This frame is damaged.	
8700-8701 PB L 73424	Production of calcium carbide. By Treibs. Apr 21, 1941. In German.	1.50
8702-8703 PB L 73424	Raw material bases of the organic chemical industry. By Treibs. Apr 8, 1941. In German.	1.50
8704-8706 PB L 73424	These frames are damaged.	
8707-8709 PB L 73424	See frames 8675-8677.	
8710-8712 PB L 73424	These frames are damaged.	
8713-8716 PB L 73424	See frames 8675-8677.	
8717-8719 PB L 73424	These frames are damaged.	
8720 PB L 73424	Analysis of free hydrochloric acid in a copper catalyst. By Rost. Jul 31, 1941. In German.	1.50
8721 PB L 73424	Determination of the copper content in the polymerizate from the acrylonitrile production. By Rost. Jul 31, 1941. In German.	1.50
8721A PB L 73424	Determination of carbon dioxide in the waste gas from the production of acrylonitrile. By Rost. Aug 20, 1941. In German.	1.50
8722-8726 PB L 73424	Analysis of the copper catalyst from the production of acrylonitrile. By Rost. Jul 31, 1941. In German.	1.50
8727-8731 PB L 73424	These frames are damaged.	
8732-8733 PB L 73424	Determination of chlorine in organic liquids. By Rost. Aug 21, 1941. In German.	1.50
8734-8735 PB L 73424	See frames 8675-8677.	
8736-8738 PB L 73424	These frames are damaged.	
8739-8742 PB L 73424	See frames 8675-8677.	
8743-8751A 8761-8764 PB L 73424	Titration of aldehydes with sulfite-bisulfite. By Kihardt. Dec 16, 1941-Feb 10, 1942. In German.	1.50
8752-8753 PB L 73424	See frames 8675-8677.	
8754-8758 PB L 73424	These frames are damaged.	
8759-8760 PB L 73424	See frames 8675-8677.	
8761-8764 PB L 73424	See frames 8743-8751A.	
8765-8774 8777-8778 8781-8786 PB L 73424	Short reports for January-September 1942. By Treibs. Feb 28, 1942-Oct 5, 1942. In German.	2.00
8775-8776 PB L 73424	These frames are damaged.	
8777-8778 PB L 73424	See frames 8765-8774.	
8779-8780 PB L 73424	Production of polyvinylbutyracetal. n.d. In German.	1.50
8781-8786 PB L 73424	See frames 8765-8774.	

PB L 73424-S. WACKER, ALEXANDER, G.M.B.H., MUNICH, GERMANY. Reports in plastics and other synthetic substances. (FIAT Microfilm Reel K 121, Frames 8667-8786, abstract cards) 1940-1942. 28 p. Price: Microfilm-$1.00 - Photostat-$2.00
Brief abstracts of the individual items on the above reel K 121, PB 73424, prepared by FIAT personnel in Germany.

Inorganic Chemicals

PB L 37992-S. A. G. FÜR CHEMISCHE INDUSTRIE, GELSENKIRCHEN. Flowsheet CS_2 Distillation, MC 27 (Drawing). (FIAT Final Rept 723, Supp.) Oct 1945. 8 p. Price: Microfilm-$1.00 - Photostat-$1.00
A supplement to PB 37992, abstracted in v. 3, p. 860, this Bibliography.

PB L 86152. FISHWICK, E. A. and others. Zinc oxide manufacture in Germany. (BIOS Final Rept 1401, Item 22). Oct 1946. 191 p. Price: Microfilm-$5.75 - Photostat-$20.00

This report covers an investigation into the manufacture of zinc oxide in Germany. The scope of this report covers: (1) Production of zinc oxide by indirect methods; (2) Production of zinc oxide by direct methods; (3) Production of zinc oxide by wet process for particular use in the rubber industry; (4) Discussion on the use of various zinc oxide's in the rubber and paint industries, together with analysis, physical tests and electronic micrographs; and, investigation of automatic filtering plant as used in the German zinc oxide industry. A total of seventeen firms were visited and an individual report is presented covering each firm. The text is illustrated throughout including a number of plant layouts.

PB L 37788-S. I. G. FARBENINDUSTRIE A. G. Electrolysis bath for lead-sodium alloy. (Supplement to PB 37788). (FIAT MC Rept 677, Supp). n. d. 19 p. Price: Microfilm-$1.00 - Photostat-$2.00

This report is a supplement to PB 37788, vol. 3, p. 6, this Bibliography. It is the detailed drawing of the design of the cell developed by Dr. Hamprecht. This drawing bears the FIAT designation M.C. 677 and the I.G. Farbenindustrie drawing number N5489b1. Some parts will not reproduce well without first being retraced.

PB L 85708. I. G. FARBENINDUSTRIE A. G., LEVERKUSEN, GERMANY. Process for the continuous production of cyanogen chloride. Sep 1946. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00

Laboratory equipment and similar semi-technical equipment are described. They consist of two columns. In the first column a slight excess of chlorine is reacted with hydrocyanic acid. The resulting cyanogen chloride is washed for removal of non-reacted hydrocyanic acid which is recycled; then the cyanogen chloride is conducted through the second column for removal of excess chlorine and other impurities, by means of sodium bisulfite and sulfite, calcium chloride, lime from marble, antimony, and phosphorus pentoxide. In German.

PB L 73720. PAULING, HARRY. Reports in inorganic chemistry. (FIAT Microfilm Reel B 286, Frames 1-24) 1941-1944. 24 f. Price: Microfilm-$1.00 - Enlargement print-$2.50

This reel was prepared by FIAT investigators in Germany. Individual items are listed below and will be available as enlargement prints. The entire reel may be purchased as a microfilm for $1.00. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
1-11 PB L 73720	Sodium nitrate from sodium chloride. By H. Pauling. n.d. In German.	$1.50
12-14 PB L 73720	Production of highly concentrated nitric acid. By H. Pauling. Jun 28, 1944. In German.	1.50
15-17 PB L 73720	Production of highly concentrated sulfuric acid with direct utilization of the waste heat. By Pauling. Jun 28, 1944. In German.	1.50
18-23 PB L 73720	Installation for the concentration of sulfuric acid. By H. Pauling. n.d. In German.	1.50
24 PB L 73720	Reaction of sodium chloride with nitric acid. Jun 6, 1941. In German.	1.50

PB L 73720-S. PAULING, HARRY. Reports in inorganic chemistry. (FIAT Microfilm Reel B 286, Frames 1-24, abstract cards) 1941-1944. 10 p. Price: Microfilm-$1.00 - Photostat-$1.00

Brief abstracts of the individual items on the above reel B 286, PB 73720, prepared by FIAT personnel in Germany.

Ordnance Chemicals

PB L 85391. BELL, C. D. and others. Production of ethyleneurea by the ethylenediamine-urea route. Pilot plant studies. Progress report to Apr 17, 1944. (OSRD Rept 3751; NDRC 8.2 Rept 46). Jun 1944. 139 p. Price: Microfilm-$4.25 - Photostat-$14.00

The continuous synthesis of ethylene urea via the ethylenediamine-urea route recommended from small scale work was investigated in a pilot plant. All operations were carried out on a practicable basis and sufficient information to design a commercial scale plant was obtained. An overall yield of 69%, which corresponds to an average yield of 91% on each of the four process steps, was demonstrated. This report forms the basis for design and operating recommendations issued under separate cover. This project was carried out by the Ammonia Department, Chemical Division, DuPont Experimental Station.

PB L 85388. BURROWS, L. A. Production of Haleite from ethyleneurea. Final report to Mar 1, 1944. (OSRD Rept 3466; NDRC 8.2 Rept 39). Apr 1944. 75 p. Price: Microfilm-$2.75 - Photostat-$8.00

Laboratory and semiworks evaluations of the mixed acid process for the nitration of ethylene urea indicated that this method was unsuitable for large-scale manufacture of Haleite. The most serious objection to this process was the long time required for filtration of the dinitroethylene urea. A new procedure in which strong nitric acid replaced mixed acid as the nitrating agent appeared to have the following advantages over the mixed acid process: 1) Handling of only one acid; 2) Elimination of the sulfation procedure; 3) More rapid nitration; 4) Much faster filtration of dinitroethylene urea; 5) Shorter hydrolysis period; 6) Slightly higher yields; 7) Less equipment required. An extensive semiworks study showed that the strong nitric acid process should be entirely satisfactory for large-scale production. It was estimated that two tetryl lines on one of the military explosives plants could be readily modified for the production of 10,800,000 lb. of Haleite per year by this process. Haleite production in the Eastern Laboratory pilot plant totalled 62,662 lb., most of which was sent to Picatinny Arsenal for evaluation. During the course of this production, ethylene urea manufactured by the Ammonia Department by three different processes was evaluated. Distilled material from the ethylenediamine-CO_2 process was indicated to be equal to or better than that from the ethylenediamine-urea and ethylenediamine-glycol processes. Attempts to improve the physical strength and density of Haleite pressed pellets were not very successful. Several more or less effective additives and crystal modifying agents were found, but they either were too difficult to use or failed to produce pellets with all of the desired chemical and physical properties.

PB L 85398. CAMPBELL, KENNETH N. Addition of oxides of nitrogen to ethylene. Progress report to Mar 15, 1943. (OSRD Rept 1335; NDRC 8.2 Rept 9) Apr 1943. 16 p. Price: Microfilm-$1.25 - Photostat-$2.00

This report describes the initial results obtained in the attempt to prepare ethylene-diamine by the addition of nitrogen tetroxide to ethylene, followed by reduction. The best yield of ethylene-diamine, based on nitrogen tetroxide, is 35%. The work is still in an exploratory stage and is being continued. University of Notre Dame.

PB L 85399. CAMPBELL, KENNETH N. Addition of oxides of nitrogen to ethylene. Final report, Feb 29, 1944.

(OSRD Rept 3984; NDRC 8.2 Rept 52) Aug 1944. 73 p. Price: Microfilm-$2.75 - Photostat-$8.00

In the development of Haleite two syntheses of ethylenediamine were chosen for study: (A) involved the interaction of formaldehyde and hydrogen cyanide to produce formaldehyde cyanhydrin, ammonolysis of the latter to produce aminoacetonitrile, and hydrogenation to yield ethylenediamine. This process has been developed completely through the engineering stages and will be used for full-scale manufacture of Haleite (see OSRD Repts 1487 (PB L 85392), 1793 (PB L 85403), 1794 (PB L 85402), 3080 (PB L 85404), 3751 (PB L 85391), 3851 (PB L 85400), and 3857 (PB L 85397), all appearing in this issue of the Bibliography); and (B) the addition of nitrogen dioxide to ethylene and reduction of the resulting dinitroethane to yield ethylenediamine. This second method has been studied on the laboratory scale only, and all experimental work is reported herein and in OSRD Rept 1335 (PB L 85398, this issue of the Bibliography) and OSRD Rept 1891 (PB L 30749, v. 2, p. 630, of the Bibliography). The following conclusions are drawn: (1) the reaction of ethylene and nitrogen dioxide gives only a moderate yield of materials which are reducible to ethylenediamine, and the reduction step requires relatively costly reagents, (2) the reaction would be cumbersome and hazardous to carry out on a commercial scale, and (3) even if significant improvements were achieved, the process could not compete commercially with the formaldehyde cyanhydrin method (A). "As a consequence of these three considerations, this reaction will not be evaluated on a pilot plant scale and all experimental work on this subject has been discontinued."

PB L 85404. DUPONT DE NEMOURS, E. I., AND CO. AMMONIA DEPARTMENT. Production of ethylenedureas. Step 4. Synthesis from ethylenediamine and carbon dioxide. Process description. Progress report to Nov. 23, 1943. (OSRD Rept 3080; NDRC 8.2 Rept 33) Jan 1944. 13 p. Price: Microfilm-$1.25 - Photostat-$2.00

The present report is a process description for an alternative process for Step 4, using the reaction of ethylenediamine with carbon dioxide. It is written in a form which can be readily used in connection with OSRD No. 1794; PB 85402, this Bibliography, which describes the other steps. The elimination of requirements for urea is a great enough advantage to make this the preferred process.

PB L 85402. DUPONT DE NEMOURS, E. I., AND CO. AMMONIA DEPARTMENT. Production of ethylenedureas by the ethylenediamine-urea route. Process description. Part I (First revision). Progress report to Aug. 11, 1943. (OSRD Rept 1794; NDRC 8.2 Rept 20) Sep 1943. 62 p. Price: Microfilm-$2.50 - Photostat-$7.00

This report presents detailed flow sheets, equipment requirements, and operating conditions for a plant capable of producing 60 tons/day of ethylene urea of 92% purity. The report is divided into four parts indicating the four main processing steps: (1) synthesis of formaldehyde cyanhydrin, (2) synthesis of aminoacetonitrile, (3) synthesis of ethylene diamine, and (4) synthesis of ethylene urea.

PB L 85397. DUPONT DE NEMOURS, E. I., AND CO., INC., AMMONIA DEPARTMENT. Production of ethyleneureas from ethylenediamine and carbon dioxide. A preliminary engineering study. (OSRD Rept 3857; NDRC 8.2 Rept 48). Jul 1944. 44 p. Price: Microfilm-$2.00 - Photostat-$5.00

Under Contract No. OEMsr-1118 the Du Pont Company has developed engineering information for the production of 10 tons per day and 60 tons per day of ethyleneurea. Preliminary flow diagrams, the design of major items of process equipment, preliminary building layouts, and an equipment list were prepared. On the basis of raw material requirements and availability Morgantown Ordnance Works, Morgantown, West Virginia, was selected as a possible plant site and required additions to existing service facilities were determined. From these data estimates of time and cost were prepared. The estimated cost of constructing a 10 ton per day Ethyleneurea Plant is $4,700,000 based on availability of natural gas as a raw material. Substitution of coke oven gas as a source of methane would require additional expenditure for purification equipment. Proven purification methods involving treatment under 30 atmospheres pressure would be adequate though expensive. Partial purification at atmospheric pressure could be accomplished at an estimated additional cost of $160,000. but the adequacy of this treatment should be verified by experimental test before actual use. Plant start-up based on a project priority rating of AA-1 was estimated as twelve months from receipt of priority rating with completion two months thereafter. Work under this contract except for preparation of this report was completed on December 31, 1943.

PB L 85387. DUPONT DE NEMOURS, E. I. and CO. AMMONIA DEPARTMENT. Synthesis of ethyleneureas from urea and ethylene glycol pilot plant studies. (OSRD Rept 3822; NDRC 8.2 Rept 47). Jul 1944. 51 p. Price: Microfilm-$2.25 - Photostat-$6.00

Operation of a process for making ethylene urea from ethylene glycol and urea has been demonstrated in a pilot plant designed for 100 lbs. per day, and actually operated at rates up to about 80 lbs. per day. Yields of over 55% based on glycol were obtained; however, the yield from urea was quite low (ca. 11%), since the process involved use of five mols urea per mol of glycol. The product was refined by batch distillation to give quality which was entirely satisfactory for nitration to Haleite. Preliminary design has been worked out for plants to produce 10 tons a day and 60 tons a day by this process. The process visualized is essentially that used in the pilot plant except that continuous still trains have been substituted for the batch refining stills. Costs of construction of these plants are estimated at $985,000 and $4,100,000 for the 10 and 60 ton per day plants, respectively. Cost of ethylene urea produced is estimated at 44.9¢ per lb. for a 10 ton per day production rate, and 40.1¢ per lb. for 60 tons per day. The most unattractive aspect economically is the use of a large excess of urea, resulting in high ingredient costs and requiring use of large and expensive equipment to recover the ammonia which, along with carbon dioxide, is evolved when the excess urea decomposes.

PB L 85403. LEE, D. D. and LECKY, H. S. Synthesis of ethyleneurea by the ethylenediamine-urea route. Small scale development studies. Progress report to Jul 29, 1943. (OSRD Rept 1793; NDRC 8.2 Rept 21). Sep 1943. 71 p. Price: Microfilm-$2.75 - Photostat-$8.00

A synthesis route to ethylene urea previously outlined by laboratory batch tests has been developed on a small scale into a four-step continuous process. Yields averaging 87% in each of the four steps were demonstrated and the possibility of obtaining yields averaging more than 90% was indicated. Of the four steps the first three lead to the preparation of ethylenediamine and the fourth involves reaction of the diamine with urea to form ethylene urea. On the basis of results obtained in this study, optimum practical operating conditions and equipment design were selected and recommended for use in a pilot plant demonstration of the process. A report of the Ammonia Department, Chemical Division, DuPont Experimental Station.

PB L 81600. BODENSTEIN, DIETRICH and KONDRITZER, ALBERT A. Effect of nitrogen mustard on nucleic acids during embryonic amphibian development. n. d. 1 p. Price: Microfilm-$1.00 - Photostat-$1.00

In the exposed embryos only the ribonucleic acid shows normal rise with age, while the desoxy-ribonucleic acid remains at the level reached at the time of exposure. Army Chemical Center, Maryland.

PB L 81711. KAPLAN, NORMAN. Analysis of German plastic explosives. (CWS 46th Chemical Lab Co. Tech Rept 30). May 1945. 12 p. Price: Microfilm-$1.25 - Photostat-$2.00

This report contains the experimental data, discussion, and conclusion derived from the analysis.

PB L 85400. IECKY, H. S. Synthesis of ethyleneurea from ethylenediamine and carbon dioxide. Pilot plant study. (OSRD Rept 3851; NDRC 8.2 Rept 56). Sep 1944. 48 p. Price: Microfilm-$2.00 - Photostat-$5.00
A process for the manufacture of ethylene urea from ethylenediamine and carbon dioxide has been developed on a pilot plant scale. Overall process yields to pure ethylene urea of 86% based on ethylenediamine and 88% based on carbon dioxide were demonstrated. Ethylene urea of 88.5-91.0% purity was produced directly and vacuum distillation of this material increased its purity to 96.0-98.5% with an overall recovery as high as 99% based on pure ethylene urea. From the results of the pilot plant investigation, equipment requirements were determined, optimum operating conditions were selected, and engineering data required for design of a commercial plant were obtained. Research was performed at Ammonia Department, Chemical Division, DuPont Experimental Station, Wilmington, Del.

PB L 85392. SCHWEITZER, C. E. Synthesis of ethyleneurea: Exploratory work. Progress report to May 13, 1943. (OSRD Rept 1487; NDRC 8.2 Rept 12). Jun 1943. 51 p. Price: Microfilm-$2.25 - Photostat-$6.00
The exploratory work covered by this report disclosed three methods for the synthesis of ethyleneurea. These are (1) the reaction of ethylenediamine and CO_2 under pressure; (2) the reaction of ethylenediamine and urea at atmospheric pressure; and (3) the reaction of ethylene glycol and urea at atmospheric pressure. In reactions (1) and (2), the yields were substantially quantitative; in reaction (3) the yield based on glycol was approximately 60%. Other syntheses for ethyleneurea and ethyleneurea intermediates were examined. None of these however appeared very attractive. The essential steps in a low cost method for producing ethylenediamine from formaldehyde, hydrogen cyanide, ammonia and hydrogen, were explored. The preliminary results indicated the possibility of a 75% overall yield. This report is submitted under Contract 8-254, OEMsr-373 with E. I. DuPont de Nemours and Co.

Miscellaneous Chemicals

PB L 81401. BABCOCK, J. H. and others. Preparation of n-polychloropolyfluoroheptane. (Manhattan Engineer District MDDC Rept 202). Mar 1947. 39 p. (Available from the American Chemical Society, 1155-16th Street, N. W., Washington, D. C., $0.75)
A method applicable to the commercial production of a highly fluorinated polychloropolyfluoroheptane was developed through the pilot plants. This consisted of the following steps: 1. Chlorination of n-heptane to 82 - 83% Cl_2 which corresponds to dodecachloroheptane; 2. Hydrofluorination of this material with anhydrous HF and $SbCl_5$. The $SbCl_5$ appeared to be more than just a catalyst since the reaction was very slow when only catalytic amounts were used and it was found desirable to use an amount of $SbCl_5$ equal in weight to the chloroheptane to be fluorinated. However, this could be reused, it being only necessary to add approximately 10 per cent of fresh material with each run to replace mechanical losses; 3. Fractional distillation to remove the highly fluorinated material and recycling of the less completely reacted material. During these reactions, some dehydrohalogenation took place so that the final product had an average composition of $C_7H_2F_{10.5}Cl_{1.5}$ which could be converted to a satisfactory product by treatment with either cobalt trifluoride or silver difluoride. Published in Journal of Industrial and Engineering Chemistry, March 1947. A contribution of Hooker Electrochemical Company.

PB L 85773. HOCK, EUGEN. The setting process of wood gluing - Part I. (AAF T-2 Translation 1061). Jan 1947. 27 p. Price: Microfilm-$1.50 - Photostat-$3.00
The chemico-physical aspects of the bonding process in wooden aircraft construction. A description of the bonding methods for the conventional glues (gelatine, casein and phenoplastics), the softening agents, application to the wood, the use of pressure and heat, and the hardening characteristics. A description of static stress test methods for bonded structures is included.

PB L 81397. CADY, G. H. and others. Early fluorocarbon studies at Columbia University. (Manhattan Engineer District MDDC Rept 319). Jan 1947. 45 p. (Available from the American Chemical Society 1155-16th Street, N. W., Washington 6, D. C., $0.75)
A catalytic vapor phase procedure for the direct fluorination of hydrocarbons was developed and was used to produce several new compounds as well as the first fluorocarbon oils. These are characterized by their great inertness, stability, volatility, and similarity of structural isomers. The report was published in Journal of Industrial and Engineering Chemistry, March 1947.

PB 81389. DOWNING, R. C. The preparation of chlorofluoro carbons. (Manhattan Engineer District MDDC Rept 209). Mar 1947. 44 p. (Available from the American Chemical Society, 1155-16th St., N. W., Washington 6, D. C. $0.75)
The preparation of monochlorofluoroheptane from polychloroheptane was studied for the purpose of obtaining process data, particularly on the final treatment with cobalt trifluoride. Some perfluoroheptane was also formed, especially at higher temperatures and lower feed rates. The replacement of chlorine by fluorine in condensation products obtained from unsaturated chlorocarbons was explored and a variety of products was obtained. It was not possible to entirely remove the chlorine with the common fluorinating agents. Various other chlorofluorocarbons were prepared from aromatic and alicyclic compounds and from long carbon chain aliphatic oils and waxes. Some of the products indicated suitable physical characteristics in preliminary tests but none of them was studied extensively. This contribution of E. I. duPont de Nemours & Co., Inc., was published in Journal of Industrial and Engineering Chemistry, March 1947.

PB L 81399. DOWNING, R. C. The purification and compression of fluorine. (Manhattan Engineer District MDDC Rept 255). Dec 1946. 25 p. (Available from the American Chemical Society, 1155-16th Street, N. W., Washington 6, D. C., $0.75)
Fluorine was packaged at a pressure of 400 lbs/sq in. by first condensing at the temperature of liquid nitrogen and then vaporizing into evacuated nickel cylinders. The gas was compressed mechanically to a pressure of 175 lbs/sq in. Higher pressures could probably be reached in a multi-stage system. Before condensation, hydrogen fluoride was removed from the fluorine by refrigeration at -78° C. followed by reaction with sodium fluoride. The hazards of working with fluorine under pressure were recognized, and a series of tests led to some general conclusions regarding safe working methods. Published in Journal of Industrial and Engineering Chemistry, March 1947. A contribution of E. I. duPont de Nemours & Co., Inc.

PB L 70177. I.G. FARBENINDUSTRIE A.G. Reports on organic chemicals. (FIAT Microfilm Reel O-22, Frames 931-1878). 1935-1945. 947 f. Price: Microfilm-$6.00 - Enlargement Print-$95.00.
This FIAT microfilm reel deals chiefly with reports on experiments and processes in the field of polymers. 68 individual items are listed below and will be available as enlargement prints. Please give PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
931 PB L 70177	Mowitals (spraying experiments). By Schmidt. Nov 29, 1937. In German.	1.50
932 - 947 PB L 70177	Mowitals (testing). By Sammig. Aug 20, 1935. In German.	2.00
948 - 961 PB L 70177	Compound glass from Mowital. By Hager and others. Sept 25, 1941. - May 11, 1943. In German.	1.50

Miscellaneous Chemicals (contd)

962 - 970 PB L 70177 **Manufacture of Mowital.** By Eggert. Apr 25, 1941. In German. 1.50

971 - 1029 PB L 70177 **Mowitals for compound glass.** By Moeller and others. Nov 28, 1941 to Oct 24, 1944. In German. 6.00 Several pages may reproduce poorly.

1030 - 1086 PB L 70177 **Mowitals Vinylits (acetals of polyvinyl alcohol).** Oct 23, to Nov 15, 1943. In German. 6.00 Several pages may reproduce poorly.

1087 - 1089 PB L 70177 **Butadiene acrylic acid diisobutylamide copolymer.** By Kern. Mar 14, 1942. In German. 1.50

1090 - 1092 PB L 70177 **Acrylonitrile-vinyl acetate copolymer.** By Nicodemus and Rein. Mar 27 - Aug 20, 1941. In German. 1.50

1093 - 1111 1140 - 1142 PB L 70177 **Pervinan. (Copolymer from vinyl acetate and vinyl chloride).** By Wohlers and others. Mar 1, 1938 to Feb 12, 1941. In German. 2.50

1112 - 1114 PB L 70177 **New copolymers.** Mar 20, 1940. In German. 1.50

1115 PB L 70177 **Vinyl acetate-vinylbutoxy acetate copolymer.** By Wohlers. July 5, 1938. In German. 1.50

1116 - 1139 1144 - 1145 PB L 70177 **Vinyl acetate-crotonic acid copolymers.** By Billig and others. Mar 4, 1938 to Apr 24, 1940. In German. 3.00

1140 - 1142 PB L 70177 These frames are found with Frames 1093 - 1111.

1143 PB L 70177 **Propioprene-styrene emulsion polymerization.** By Nerz. Nov 7, 1940. In German. 1.50

1144 - 1145 PB L 70177 These frames are found with Frames 1116 - 1139.

1146 - 1148 PB L 70177 **Copolymers.** Oct 14, 1942. In German. 1.50

1149 - 1150 PB L 70177 **Diisocyanates.** By Nicodemus. Aug 29, 1942. In German. 1.50

1151 PB L 70177 **Saponified copolymers.** By Weihe. Jan 4, 1939. In German. 1.50

1152 PB L 70177 **Synthetic size for paper making.** By Roth. Aug 30, 1940. In German. 1.50 May reproduce poely.

1153 PB L 70177 **Copolymers with acrylamides.** By Weihe. Mar 20, 1940. In German. 1.50

1154 - 1156 PB L 70177 **Copolymers and amino-Mowitals.** By Soenke. May 3, 1939. In German. 1.50

1157 - 1159 PB L 70177 **Povimals.** By Voss. Apr 25, 1939. In German. 1.50

1160 - 1161 PB L 70177 **Continuous copolymerization for large-scale production.** By Staerck and Hahn. Nov 25, 1938. In German. 1.50

1162 PB L 70177 **Tri-copolymer.** By Semmig. Sep 1, 1938. In German. 1.50

1163 PB L 70177 **Copolymer vinyl acetate - ester of acrylic acid.** By Weihe. Jan 22, 1937. In German. 1.50

1164 - 1169 PB L 70177 **Copolymer from crotonic anhydride and vinyloctadecylether.** Mar 17, 1938. In German. 1.50

1170 - 1172 PB L 70177 **Copolymer from vinyloctadecyl ether, acrylic ester and maleic anhydride.** By Gutmann. Mar 29, 1938. In German. 1.50

1173 - 1179 PB L 70177 **Copolymers.** By Wohlers and Persiel. June 19, 1937 - July 17, 1939. In German. 1.50

1180 - 1211 PB L 70177 **Grain polymerization of vinyl compounds.** By Hahn. Mar 11, 1941, In German. 3.50

1212 - 1214 PB L 70177 **Silk-like high polymers.** By Weihe. Jan 9, 1937. In German. 1.50

1215 PB L 70177 **Grain polymers (measurements of the K-value).** By Weihe. Nov 12, 1938. In German. 1.50

1216 - 1219 PB L 70177 **Polymerization of alpha-acetoxy-butadiene.** By Braun. Jun 23, 1939. In German. 1.50

1220 - 1226 PB L 70177 **Grain polymerization.** By Hahn. Jan 27, 1939 - Apr 16, 1942. In German. 1.50

1227 - 1229 PB L 70177 **Polymerization with benzoyl peroxide.** By Freudenberger. Feb 5, 1943. In German. 1.50

1230 - 1238 PB L 70177 **Continuous polymerization of vinyl acetate.** By Hahn. Mar 19, 1940. In German. 1.50

1239 - 1251 PB L 70177 **Nitration of polyvinyl alcohol.** By Stahn and others. Sept 16, 1943 to Aug 3, 1944. In German. 1.50

1252 PB L 70177 **Vinols.** By Kollek. Feb 27,1939. In German. 1.50

1253 - 1275 PB L 70177 **Polyvinyl alcohol for printing purposes.** By Krasnlein and others. Sept 1939 to June 1942. In German. 2.50

1276 PB L 70177 **Iodo-Vinarol.** By Beil. Aug 15, 1940. In German. 1.50

1277 - 1278 PB L 70177 **Ointment base from polyvinyl alcohol.** By Bockmuehl. July 5, 1938. In German. 1.50

1279 - 1280 PB L 70177 **Emulsion MVl.** By Spiess. Jan 26, 1938. In German. 1.50

1281 - 1292 PB L 70177 **Polyvinyl alcohol.** By Spiess. May 10, - Nov 18, 1940. In German. 1.50

1293 - 1300 PB L 70177 **Vinylchloride.** By Krauseold. May 28, 1940. In German. 1.50

1301 PB L 70177 **Hostalon conveyor belts.** By Kiesskalt. Feb 11, 1942. In German. 1.50

1302 - 1312 PB L 70177 **Mowitals.** By Weihe. June 3, 1937 and Sept 21, 1937. In German. 1.50 Some pages may reproduce poorly.

1313 - 1328 PB L 70177 **Wire insulation with plastic lacquers.** By Spiecker. Jan 2, - Feb 24, 1940. In German. 2.00

1329 PB L 70177 **Use of steels in high pressure plants.** By Wehn. Apr 17, 1940. In German. 1.50

Miscellaneous Chemicals (contd)

1330 - 1495 PB L 70177 — Glycerogen(glycerol substitute.) By Fuchs and others. Jan 1937 to Jan 1945. In German. Several pages may reproduce poorly. 17.00

1496 - 1505 PB L 70177 — Polyvinyl chloride.(PCU, Vinoflex). By Freudenberger and Schladebach. June 14, 1939 and Oct 12, 1944. In German. 1.50

1506 - 1513 PB L 70177 — Povimals. (Copolymers from maleic anhydride and vinyl compounds). By Soenke, and Braun. June 17, 1943 - Feb 7, 1939. In German. 1.50

1514 - 1520 PB L 70177 — Povimal molding material. By Louis Blumer and Zwickau. Feb 27, - May 2, 1939. In German. 1.50

1521 - 1532 PB L 70177 — Mowitals, (hostalons). By Kraenzlein and others.. Apr 12, 1939 to Nov 18, 1939. In German. Some pages illegible. 1.50

1533 - 1663 PB L 70177 — Mowitals for compound glass. Dec 1938. - Dec 1944. In German. Some pages may reproduce poorly. 3.50

1664 - 1668 PB L 70177 — Hydroxyisobutyrone. By Semmig. Mar 29, 1938. In German. 1.50

1669 - 1712 PB L 70177 — Isobutyrone (disolvona). By Gross and Epple. June 14, 1938, In German. 4.50

1713 - 1715 PB L 70177 — Diisocyanates. By Jordan. Jun 19. 1941. In German. 1.50

1716 - 1734 PB L 70177 — Lacquer binding agents. By Rossmann and Wohlers. Jan 11/ Mar 18, Nov 9, 1940. In German. 2.00

1735 - 1737 PB L 70177 — Beckosols. By Wohlers. May 3, 1939. In German. 1.50

1738 - 1751 PB L 70177 — Benzoyl peroxide. Apr 7, 1933 to Sept 27, 1944. In German. 1.50

1752 - 1757 PB L 70177 — Formic acid. By Berndt. Jun 2, 1945. In German. 1.50

1758 - 1764 PB L 70177 — Formic acid. By Hanke. Feb 21, 1941/ June 11, 1943. In German. 1.50

1765 - 1771 PB L 70177 — Alpha-substituted acrylo nitriles. By Lange. Feb 1, 1939. In German. 1.50

1772 - 1777 PB L 70177 — Acrylonitrile. By Schloffer. Sep 19, 1938. In German. 1.50

1778 - 1782 PB L 70177 — Acrylamides. By Kraenzlein. Oct 4, 1940. In German. 1.50

1783 - 1788 PB L 70177 — Beta-acyl substituted acrylic acids. By Vollmann and Schloffer. Apr 25, 1938. In German. 1.50

1789 - 1792 PB L 70177 — Resistance of aluminum. By Hanke. Jun 11, 1941. In German. 1.50

1793 - 1865 PB L 70177 — Mowitals for compound glass. 1937 to 1941. In German. 7.50

1866 - 1878 PB L 70177 — Acetals of polyvinyl alcohols. By Weihe. Jun 13, 1938. In German. 1.50

PB L 70177-S. I.G. FARBENINDUSTRIE A.G. Reports on organic chemicals. (FIAT Microfilm Reel O-22, Frames 931-1878, abstract cards). 1935 -1945. 68 p. Price: Microfilm-$2.00 - Photostat-$5.00.

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These are abstracts of the items on FIAT microfilm reel O 22 (PB 70177). They were prepared by FIAT abstracters in Germany.

PB L 4689. I. G. FARBENINDUSTRIE A. G. Reports on the preparation of butadiene, the production of acetylene by the arc process, technical details of production and experimentation. (FIAT Microfilm Reel C 14, Frames 1-1330) 1939-1945. 1330 f. Price: Microfilm-$6.00 - Enlargement print-$133.00

This FIAT microfilm reel contains various reports in the field of organic chemistry. Individual items, listed below, will be available as enlargement prints only. Please include PB and frame numbers when ordering an individual item. These reports are in German.

PB Number Frames	Title	Price
L 64424 Frames 1-34	Chemical Works Hüls: The manufacture of 1.6-diols from diacetylene and carbonyl compounds. By Weissbach. 1943. In German.	$3.00
L 64425 Frames 35-46	Experiments for the hydrogenation of butindiol at 300 and 700 atm. By Adam and others. 1944. In German.	1.00
L 64426 Frames 47-54	Method for the catalytic hydrogenation of polyenealdehydes. Patent. By Langenbeck. May 6, 1944. In German.	1.00
L 64427 Frames 55-142	Octyl alcohol, dodecyl alcohol by hydrogenating condensation-products of crotonaldehyde. By Haag and others. 1942-1943. In German.	6.00
L 64428 Frames 143-146	Butindiol experiments. Butylidenacetophenone and its hydrogenation products. By Steinleiter. 1944. In German.	1.00
L 64429 Frames 147-161	Preliminary views on the report of the Organic Department of the 20th May, 1944, re the production of distyrene. By Steinbrink and others. 1944. In German.	1.00
L 64430 Frames 162-167	Report on the intermediate fraction I ("ZW 1"). Butadiene crude gas. By Postawka and Bub. 1943. In German.	1.00
L 64431 Frames 168-175	The after-hydrogenation of the alcohol-butanol-water mixture and its separation by continuous distillation. By Haag and Bub. 1943. In German.	1.00
L 64432 Frames 176-178	The hydrogenation of crotonaldehyde to butyraldehyde. 1st part. By Stein and others. 1943. In German.	1.00
L 64433 Frames 179-184	Catalytic dehydrogenation of primary and secondary alcohols to aldehydes and ketones. 2nd and 3rd parts. By Steinbrink and others. 1943. In German.	1.00
L 64434 Frames 185-188	Experiments for the preparation of 2-ethyl-1-hexanol on a semi-industrial scale by a catalytic dehydrogenation of 2-ethylhexanol with "Styrene catalyst Lu. 82." By Steinbrink and others. 1943. In German.	1.00
L 64435 Frames 189-191	The separation of acetals from residues of butol. By Bonstedt and others. 1943. In German.	1.00

L 64436 Frames 192-193 — Report on the condensation of ethyl methyl ketone and diglycolic acid with formaldehyde. By Postuwka. 1942. In German. 1.00

L 64437 Frames 194-206 — Investigation of the ultra-violet absorption and the Raman-spectra of several products. By Wetter. 1941. In German. 1.00

L 64438 Frames 207-211 — The ultra-violet absorption of certain ketones. By Wetter. 1941. In German. 1.00

Frames 212-223 — These frames are duplicate of Frames 341-353, PB L 64459, below.

L 64439 Frames 224-231 — Styrene reactions (with certain organic and inorganic substances). By Mondheim. 1941. In German. 1.00

L 64440 Frames 232-234 — The condensation of acetophenone with aliphatic aldehydes. By Postuwka and Bub. 1941. In German. 1.00

L 64441 Frames 235-237 — Styrene-formaldehyde condensation. By Postuwka and Bub. 1941. In German. 1.00

L 64442 Frames 238-239 — The condensation of acetophenone with aldehydes to unsaturated aromatic ketones. By Postuwka and Bub. 1941. In German. 1.00

L 64443 Frames 240-245 — Short description of various catalytic processes at Ludwigshafen. 1940. In German. 1.00

L 64444 Frames 246-254 — Disturbances in the ethylbenzene factory. By H. Hillemann. 1944. In German. 1.00

L 64445 Frames 255-256 — Polyalcohols from butadiene oil and crude butadiene gas. 1944. In German. 1.00

L 64446 Frames 257-263 — Experiments for the continuous condensation of styrene hydrocarbons with aromatic compounds (phenols and their derivatives as well as hydrocarbons). By Steinbrink. 1944. In German. 1.00

L 64447 Frames 264-271 — Experiments for the production of 2-ethylhexanol. By Haag and others. 1944. In German. 1.00

L 64448 Frames 272-276 — Experimental polymerization of styrene of the technical retort oil with "Phosphorsäure A Kohle" catalyst in the homogenization apparatus of the styrene works. By Steinbrink. 1944. In German. 1.00

L 64449 Frames 277-288 — Comparison of the 1100 mm and 1600 mm pure ethylbenzene columns at a varying number of plates. By Hillemann and others. 1943-1944. In German. 1.00

L 64450 Frames 289-294 — The hydrogenation of pure aldol at 700 atm. By Haag and others. 1943. In German. 1.00

L 64451 Frames 295-302 — Report on a visit at Schkopau: I. Benzene-ethylbenzene production. II. Styrene production. By Hillemann and Roh. 1943. In German. 1.00

L 64452 Frames 303-306 — Report on visit: Exchange of experiences of the intermediate production - Hüls and Schkopau. Aldol production; hydrogenation; butol distillation; hexantriol; alkylation; styrene production; styrene distillation; butadiene production. By Bub. 1943. In German. 1.00

L 64453 Frames 307-314 — Comparative measurements during the production of butadiene. By Saurwein and Bub. 1943. In German. 1.00

L 64454 Frames 315-317 — The hydrogenation of crotonaldehyde to butyraldehyde. By Stein and Haag. 1943. In German. 1.00

L 64455 Frames 318-319 — Experiments for the production of methyl ethyl ketone from secondary butanol of the butol distillation. By Steinbrink and others. 1943. In German. 1.00

L 64456 Frames 320-325 — The preparation of crotonaldehyde enolacetate. By Bonstedt. 1943. In German. 1.00

L 64457 Frames 326-330 — Catalytic furnaces. By Saurwein. 1942. In German. 1.00

L 64458 Frames 331-340 — Hydrogenation of crude octatrienal. By Menz and Haag. 1942. In German. 1.00

L 64459 Frames 341-353 — Research on the alkylation reaction of benzene with ethylene for a preferential yield of diethylbenzene. By Krecke and Roh. 1941. In German. 1.00

L 64460 Frames 354-363 — Report on a joint hydrogenation of alcohol-butanol-water mixture in Leuna. By Bub and Haag. 1940. In German. 1.00

L 64461 Frames 364-390 — The dehydrogenation of n-butane to n-butylene. By Roh and Hoffmann. n. d. In German. 2.00

L 64462 Frames 391-508 — 6th July, 1937. The present state of the production and treatment of acetylene obtained by the arc process. In German. 11.00
Frames 468-470 and 481 are illegible.
Some others are poorly legible.

L 64463 Frames 509-714 — The production of butadiene. Chemical Works Hüls. Data on catalytic ovens. Technical improvements in the production methods. Plans for expanding the production plant. Monthly production reports and balance sheets. 1939-1945. In German. 20.50
In part poorly legible.

L 64464 Frames 715-903 — The arc process. Production reports. Monthly reports. Technical difficulties. Apparatus. 1942-1945. In German. 19.00

L 64465 Frames 904-910 — Experiments with styrene furnaces. By Brunotte. 1944. In German. 1.00

L 64466 Frames 911-938 — The physical foundations of the liquefaction of gases and rectification. By Hausen. n. d. In German. 3.00

L 64467 Frames 939-952 — Diagrams and drawings. 1940. In German. 2.00

L 64468 Frames 953-982 — Graphs and tables for low-temperature methods. In German. 2.00

L 64469 Frames 983-990 — Separation of gases according to Linde. By Hoffmann. 1941. In German. 1.00

L 64470 — Collection of hand-written notes;

Miscellaneous Chemicals (contd)

Frames 991-1050 — probably the property of Dr. Hoffmann. n. d. In German. Partly in shorthand. — 4.00

L 64471 Frames 1051-1330 — Electric arc experiments. Influence of the electrical conditions and the construction of the oven on the reaction in electric arc ovens. Technical correspondence and discussions. 1939-1944. In German. — 28.00

L 64423 — Reports on the preparation of butadiene, the production of acetylene by the arc process, technical details of production and experimentation. Index. — 1.00

PB L 20857. I. G. FARBENINDUSTRIE A. G. Special lectures and reports on polyurethane, Mersol, and other chemical subjects, by members of the staff, 1930-1943. (FIAT Microfilm Reel G 122, Frames 1-877) 1930-1943. 877 f. Price: Microfilm-$6.00 - Enlargement print-$68.00

This FIAT microfilm reel contains reports on lectures and discussions at various commission meetings, concerning a number of organic products. Individual items, listed below, will be available as enlargement prints; please include PB and frame numbers when ordering. These reports are in German except PB 67275, which is in Italian.

PB Number Frames	Title	Price
L 67234 Frames 1-22	Chemistry of all-synthetic fibers. By Rinke. 1943. In German.	$2.00
L 67235 Frames 23-65	Polyurethanes. By Bayer. 1941. In German.	3.00
L 67236 Frames 66-97	Polyurethanes. By Bayer. 1943. In German.	3.00
L 67237 Frames 98-112	Minutes of the 5th Polyamide Meeting. 1942. In German.	1.00
Frames 113-127	These frames are duplicates of Frames 98-112.	
L 67238 Frames 128-156	Minutes of the 3rd Polyamide Meeting. 1941. In German.	2.00
L 67239 Frames 157-165A1	New intermediates for linear polymers. In German.	1.00
L 67240 Frames 165A2-165A16	Miscellaneous business correspondence. 1941-1943. In German.	1.00
	Extracts from Minutes of VRA Conferences.	
L 67241 Frames 165B-165D	Recent studies of high polymers, particularly purely synthetic fibers. By Kleine. 1938. In German.	1.00
L 67242 Frames 165E-165F	Polyamides as plastic materials. By Hopff and Kolleck. 1939. In German.	1.00
L 67243 Frames 165G-165H	Fibers, bristles, and films on synthetic basis. By Kleine. 1940. In German.	1.00
L 67276 Frame 165I	Polyurethanes. By Bayer. 1941. In German.	1.00
L 67244 Frame 165J	Recent developments in the chemistry of diisocyanates. By Bayer. 1943. In German.	1.00
L 67245 Frames 166-179	Determination of wetting speeds of textiles. By Patat. 1938. In German.	1.00
L 67246 Frames 180-206	Pre-hydrolysis in cellulose production. By Helms. 1943. In German.	2.00
L 67247 Frames 207-241	Phytol and the carotinoid pigments. By Heidenreich. 1930. In German.	3.00
L 67248 Frames 242-273	Research in dyes and its results of recent years. By Kraenzlein. 1938. In German.	3.00
L 67249 Frames 274-294	Survey of most important results in dye research at Leverkusen, 1935-1938. By Bayer. 1938. In German.	2.00
L 67250 Frames 295-353	Survey of chemical-technical and scientific progress in dyes. By Pflaumer. 1938. In German.	5.00
L 67251 Frames 354-402	Production of "Tanigan extra" tanning agents. By Boehm. 1942. In German.	4.00
L 67252 Frames 403-420	Application techniques of "Tanigan extra" tanning agents. 1942. In German.	2.00
L 67253 Frames 421-430	Possible uses of "Wofatites." By Richter. 1942. In German.	1.00
L 67254 Frames 431-475	Inorganic pigments. By Meder. 1939. In German.	3.00
L 67255 Frames 476-507	Activated carbon. By Niemann. 1939. In German.	3.00
L 67256 Frames 508-524	Application of process technology in chemical industry. By Patat. 1942. In German.	2.00
Frames 525-541	These frames are duplicates of Frames 508-524.	
L 67257 Frames 542-607	Two motor fuel intermediates for important chemical purposes. By Herold. 1939. In German.	5.00
L 67258 Frames 608-612	Views on the course of reaction of photo-technical sulfochlorination of paraffin hydrocarbons. By Geib. n. d. In German.	1.00
L 67259 Frames 613-616	Remarks on the reaction mechanism of the sulfochlorination of hydrocarbons. By Geib. 1940. In German.	1.00
L 67260 Frames 617-624	Reaction of sulfur dioxide and chlorine with hydrocarbon derivatives. By Smeykal and Asinger. 1939. In German.	1.00
L 67261 Frames 625-642	Report on constitution and percentage distribution of products formed by sulfochlorination of propane in carbon tetrachloride solution. By Asinger and others. 1940. In German.	2.00
L 67262 Frames 643-664	The effect of sulfur dioxide and chlorine on gaseous saturated hydrocarbons. By Smeykal and others. 1940. In German.	2.00
L 67263 Frames 665-669	Preparation of low-molecular aliphatic chlorosulfonic acid chlorides, and their conversion into taurines. By Asinger and Böck. 1940. In German.	1.00

L 67264 Frames 670-699A — Simultaneous reaction of sulfur dioxide and chlorine with liquid hydrocarbons. By Smaykal and others. 1939. In German. 3.00

L 67265 Frames 700-709 — Sulfochlorination of saturated hydrocarbons. By Herold. 1940. In German. 1.00

L 67266 Frames 710-741 — Production of surface active substances by alkaline hydrolysis of reaction products of sulfur dioxide and chlorine saturated aliphatic hydrocarbons in light. By Smaykal and others. 1939. In German. 3.00

L 67267 Frames 742-754 — Experiments on utilizing "Mersain" sulfonate (Lg 167) and "Mersain" sulfochloride for soaps and detergents. By Spohn. 1939. In German. 1.00

L 67268 Frames 755-760 — Reactivity of sulfochlorides formed by the reaction of chlorine and sulfur dioxide with hydrocarbons. By Smaykal and Asinger. 1939. In German. 1.00

L 67269 Frames 761-768 — Production of "Mersol K" by extraction of mersain semisulfochloride with selective solvents. By Asinger and Schmidt. 1940. In German. 1.00

L 67270 Frames 769-807 — Synthetic remedies for malaria and bacterial infections. By Mietzsch. 1942. In German. 3.00

L 67271 Frames 808-812 — Report on the lecture given by Prof. G. Wittig on recent chemistry of organic metal compounds. 1943. In German. 1.00

L 67272 Frames 813-820 — Process for highly concentrated nitric acid. By Beck. 1936. In German. 1.00

L 67273 Frames 821-833 — Production of low-ash coke. By Geisler. 1942. In German. 1.00

L 67274 Frames 834-847 — Electrode coke from de-ashed bituminous coal. By Geisler. 1943. In German. 1.00

L 67275 Frames 848-877 — Description of the Schkopau operation. Production of acetaldehyde. (Including purification of acetylene.) 1940. In Italian. 2.00

L 67233 — Special lectures and reports on polyurethane, mersol, and other chemical subjects by members of the staff. 1938-1943: Index. 1.00

PB L 81400. IRWIN, C. F. and others. Fluorination of petroleum oils (I) Reaction in the vapor phase with cobalt trifluoride. (Manhattan Engineer District MDDC Rept 325). Mar 1947. 12 p. (Available from the American Chemical Society 1155-16th Street, N. W., Washington 6, D. C., $0.75) The vapor phase fluorination of hydrocarbons with CoF_3 as already described was extended to the higher boiling oils such as kerosene and light lubricating oils in order to obtain fluorocarbons with a boiling range of 180-350° C./760 mm. The lower boiling fluorocarbons were desired as a medium for fluorination reactions and the heavier ones for other purposes. Published in Journal of Industrial and Engineering Chemistry, March 1947. A contribution from Jackson Laboratory, E. I. duPont de Nemours and Company.

PB L 86939 and PB L 86940. KAGAKU KŌGYŌ JIHŌ-SHA (CHEMICAL INDUSTRY REVIEW CORP.). The chemical industry review. Jan 1941-Jun 1942. Paging and prices as follows:

PB	Dates	Pages	Price Micro.	Price Photo.
L 86939	Jan-Dec 1941	1781	$7.00	$179.00
L 86940	Jan-Jun 1942	816	7.00	82.00

These documents are bound volumes of a Japanese weekly journal on current research as applied to chemistry. In Japanese.

PB L 86754-PB L 86757. KŌGYŌ KAGAKKAI (SOCIETY OF CHEMICAL INDUSTRY), TOKYO. Journal. v. 44, Nos. 1-12; v. 45, Nos. 1,2,3,8; v. 46, Nos. 1-12; and v. 47, Nos. 1-8. 1941-1944. Paging and prices as follows:

PB	Volume	Nos.	Date	Pages	Price Micro.	Price Photo.
L 86754	44	1-12	1941	1534	$7.00	$154.00
L 86755	45*	1,2,3,8	1942	622	7.00	63.00
L 86756	46	1-12	1943	1572	7.00	158.00
L 86757	47	1-8	1944	920	7.00	92.00

* For v. 45, Nos. 4-7, 9-12, see PB L 62083-PB L 62090.

These documents are bound or unbound volumes, each containing a year's issues of a Japanese technical journal on current chemical research and published ordinarily at the rate of twelve issues annually. The Kōgyō Kagaku Zasshi, main binding, is published in conjunction with The Journal of the Society of Chemical Industry, supplemental binding (containing abridged translations of original reports appearing in the main binding in one of the following languages: English, German, French or Esperanto). Except for occasional notes in European languages, the main binding always appears in Japanese.

PB L 86752 and PB L 86753. KŌGYŌ KAGAKKAI (SOCIETY OF CHEMICAL INDUSTRY), TOKYO. Journal, Supplemental binding. v. 44-45. 1941-1942. Paging and prices as follows:

PB	Volume	Date	Pages	Price Micro.	Price Photo.
L 86753	44	1941	534	$7.00	$54.00
L 86752	45	1942	508	7.00	51.00

These documents are unbound volume groupings, each containing a year's issues of a Japanese technical journal on current chemical research which is ordinarily published at the rate of twelve issues annually. The Journal of the Society of Chemical Industry, Supplemental Binding, is published by the Society of Chemical Industry, Tokyo, in conjunction with the Japanese language Main Binding (Kōgyō Kagaku Zasshi), contains abridged translations of original reports appearing in the Main Binding, and for the convenience of foreign readers is printed in one of the following languages: English, German, French or Esperanto.

PB L 86428. KUHN, L. P. The behavior of nitric acid, ethyl nitrate and nitric anhydride in sulfuric acid solution. (Aberdeen Proving Ground Ballistic Res Lab Rept 630; Interior Ballistic Lab Problem I-216) Apr 1947. 10 p. Price: Microfilm-$1.00 - Photostat - $1.00
Evidence based upon spectroscopic and cryoscopic data and upon chemical reactivity indicates that nitric acid, nitric anhydride and ethyl nitrate yield NO_2^+ ions in sulfuric acid solution, substantiating the results of previous investigators. A parallel is drawn between the ionization of these substances and the complex ionization of certain organic acids in sulfuric acid. The results are in accord with the currently accepted theory of the mechanism of nitration with mixed acids.

PB L 81392. MCBEE, E. T. and others. Preparation of polyhaloheptanes: I. The chlorination of n-heptane. (Manhattan Engineer District MDDC Rept 219). Dec 1946. 11 p. (Available from the American Chemical Society, 1155-16th Street, N. W., Washington 6, D. C., $0.75)
Polychloroheptanes containing about 83% chlorine were prepared by the liquid phase photochemical chlorination of heptane at about 100° C. The effects of temperature, pressure, catalysts, and electrical stress were investigated. A contribution of Purdue University, published in Journal of Industrial and Engineering Chemistry, March 1947.

PB L 81394. MILLER, W. T. The fluorination of perhalogen-olefins. (Manhattan Engineer District MDDC Rept 431). Mar 1947. 17 p. (Available from the American Chemical Society, 1155 16th Street, N. W., Washington 6, D.C., $0.75)
Elementary fluorine was utilized as a fluorinating agent for perhalogen-olefins by direct reaction and for the preparation of reactive metal fluorides. The principal products obtained from the reaction of a completely halogenated liquid olefin with fluorine are the normal addition product and the dimer addition product. Published in the Journal of Industrial and Engineering Chemistry, March 1947.

PB L 81390. MILLER, W. T. The preparation and reactions of perfluorobutadiene - 1, 3. (Manhattan Engineer District MDDC Rept 432) Mar 1947. 9 p. Available from the American Chemical Society, 1155 16th Street, N.W., Washington 6, D. C., 75¢
This paper prepared for delivery before A.C.S. meeting, Sept. 12, 1946, was published in Journal of Industrial and Engineering Chemistry, March 1947.

PB L 81393. MILLER, W. T. The preparation of low polymers of trifluorochloroethylene and their utilization for the production of chlorofluorocarbon lubricants. (Manhattan Engineer District MDDC Rept 433). Mar 1947. 23p. (Available from the American Chemical Society, 1155-16th Street, N. W., Washington 6, D. C., $0.75)
Low polymers of trifluorochloroethylene were arbitrarily considered as including polymers below the molecular weight range corresponding to useful mechanical strength. The principal interest in the preparation of low polymers was to produce highly stable oils and greases and considerable work was done on this type of process. The polymer oil process which was later operated by the Hooker Electrochemical Company consisted of the production of low polymer trifluorochloroethylene which was then treated with cobalt trifluoride to stabilize end groupings. Additional crude oil fraction was obtained by thermally cracking byproduct polymer formed above the desired oil grease range of molecular weight. The stabilized oil product will be designated as polymer oil. Published in Journal of Industrial and Engineering Chemistry, March 1947.

PB L 81395. MURRAY, R. L. and others. Mechanical fluorine compression. (Manhattan Engineer District MDDC Rept 224). Dec 1946. 9 p. (Available from the American Chemical Society, 1155-16th Street, N. W., Washington 6, D. C., $0.75)
A mechanical pump for the compression of gaseous fluorine was developed, based on two or more pulsating diaphragms hydraulically connected by liquids relatively inert to fluorine, and operated by a commercial reciprocating pump through the medium of a petroleum oil. Such pumps have been operated continuously without difficulties for more than a year. Published in Journal of Industrial and Engineering Chemistry, March 1947. A contribution of Hooker Electrochemical Company.

PB L 81388. MURRAY, R. L. and others. Preparations of xylenehexafluoride. (Manhattan Engineer District MDDC Rept 225). Mar 1947. 23 p. (Available from the American Chemical Society, 1155-16th St., N. W., Washington 25, D. C., $0.75)
A method suitable for the commercial manufacture of xylenehexafluoride and chloro derivatives thereof was developed and successfully applied to the production of this material. A contribution of the Hooker Electrochemical Company, published in March 1947, issue of the Journal of Industrial and Engineering Chemistry.

PB L 86360. ROBERTS, F. H. The preparation of formamide as an intermediate for acrylonitril production and acrylonitril from acetylene. (Naval Tech Mission in Europe. Tech Rept 106-45) Jun 1945 37 p. Price: Microfilm-$1.75 - Photostat-$4.00
The following information was obtained during an interrogation of Dr. Goggel of the I.G. Farbenindustrie at the Ludwigshafen Plant on 28 May 1945 and interrogation of Dr. Bauman of the I.G. Farbenindustrie Plant at Hüls on 24 May 1945. The products are not novel nor are their end uses. Methods analogous to these, with the exception of the synthesis of formamide, are used in the United States with comparable or better yields. The disclosure here is not intended to suggest that this path for synthesis is better in any way; but is simply to indicate the methods used in Germany. The application to any war effort is remote since these are established products in the United States. Formamide is an intermediate for the preparation of hydrogen cyanide. This compound in turn reacts with ethylene oxide to give ethylene cyanohydria which is dehydrated to acrylonitril. The only novel part of the synthesis is the production of methyl formate by the addition of carbon monoxide to methanol. The synthesis used at the Hüls plant is the direct addition of hydrogen cyanide to acetylene which gives acrylonitril.

PB L 81396. SCHUMB, W. C. A study of the electrolytic generation of fluorine. (Manhattan Engineer District MDDC Rept 328). Dec 1945. 27 p. (Available from the American Chemical Society, 1155-16th Street, N. W. Washington 6, D. C., $0.75)
The HF content of the electrolyte employed in the generation of fluorine should be kept within rather narrow limits if polarization of carbon anodes is to be avoided. For the control of this quantity, a specific gravity method was developed, in which a monel float was used to indicate the composition. Measurements of the specific conductance of electrolyte mixtures were carried out in a specially designed cell, made of saran, at 90 to 100° C, over the range 37 to 45 percent HF. The importance of providing vertical circulation of the electrolyte around the cathode during electrolysis was demonstrated by comparative experiments with two cells, in one of which such circulation was prevented, in the other, permitted. Cooler operating temperatures were attained when such circulation was provided, and as a result larger current densities could be employed without giving rise to polarization difficulties. Addition of lithium fluoride as an aid in preventing polarization of carbon anodes is complicated by the fact that the solubility of the LiF in the electrolyte is quite small, and on prolonged use of the cell nearly all of the added fluoride is found to settle to the bottom of the cell with the sludge. The same difficulties were encountered with added aluminum fluoride. Published in Journal of Industrial and Engineering Chemistry, March 1947. Contribution of Massachusetts Institute of Technology, Division of Industrial Cooperation.

PB L 86766. SERGEYS, F. J. The chlorination of ethane - a gas-phase type plant proposed for Heydebreck and a liquid-phase pilot plant at Oppau. n.d. 14 p. Price: Microfilm-$1.25 Photostat-$2.00.
A thermal, gas-phase ethane chlorination process for the production of ethyl chloride had been operated at Leuna and a similar type plant was proposed for Heydebreck. Detailed equipment drawings for the Heydebreck plant were located at Ludwigshafen. A pilot plant for the liquid-phase photochemical chlorination of ethane was developed at Oppau and an outline of this process is included.

PB L 86767. SERGEYS, F J. The manufacture of dichloropropane and allyl chloride at Oppau. n.d. 10 p. Price: Microfilm-$1.00 - Photostat-$1.00,
This report presents information on the photochemical chlorination of propane to dichloropropane and the subsequent dehydrochlorination of this intermediate to allyl chloride as practiced at the I. G. plant at Oppau. The chlorination is a liquid phase photochemical reaction taking place at 20 atm. gauge. The dehydrochlorination is a thermal cracking reaction at 500°C. Maintenance of moisture-free streams is essential to prevent excessive corrosion of equipment.

PB L 81398. STRUVE, W. S. and others. Fluorination of petroleum oils (II) Reaction in the liquid phase with silver difluoride. (Manhattan Engineer District MDDC Rept 331). Mar 1947. 13 p. (Available from the American Chemical Society, 1155-16th Street, N. W., Washington 6, D. C., $0.75)
Attempts were made to find improved methods of preparing a substantially perfluorinated hydrocarbon oil since the vapor phase reaction of hydrocarbon oils with elemental fluorine in the presence of a silver-plated copper catalyst gave but 15 - 25% of viscous perfluorinated hydrocarbons boiling in the range of 137 - 220° C. at 10 mm. Published in Journal of Industrial and Engineering Chemistry, March 1947. A contribution from Jackson Laboratory, E. I. duPont de Nemours and Company.

PB L 81391. TESTON, R. and MCKENNA, F. E. A semi-micro method for the simultaneous determination of carbon, fluorine, and chlorine in halocarbons. Mar 1947. 23 p. (Available from the American Chemical Society, 1155-16th Street, N. W., Washington 6, D. C., $0.75)
Carbon, fluorine, and chlorine (and bromine) can be determined simultaneously in halocarbons, which do not contain hydrogen, by a combustion method. After decomposition of the compound at 1000° C. in a stream of oxygen, the chlorine reacts with silver in an absorption tube maintained at 295° C. (if bromine is present, it reacts simultaneously). Fluorine reacts with quartz to form SiF_4 which is then absorbed on alumina in a tube maintained at 175° C. Carbon dioxide is absorbed by Ascarite as in the conventional carbon and hydrogen determinations. Submitted for publication in Journal of Industrial and Engineering Chemistry, March 1947.

* PB L 61595. U. S. FIELD INFORMATION AGENCY, TECHNICAL. Extraction of fatty acids from dilute aqueous solutions from the Fischer synthesis. (Tech Bulletin T-35) May 1947. 1 p. Price: Mimeo-$0.25
The method mentioned extracts only the C_4 and higher acids. However, the closing sentence is, "Degussa developed a method of extracting lower fatty acids from dilute solutions using ethyl acetate."

ELECTRICAL MACHINERY, EQUIPMENT, AND SUPPLIES

Electronics

PB L 81203. COLUMBIA UNIVERSITY. DIVISION OF WAR RESEARCH. Improved echo ranging equipment (USS Sylph). (Rept D20/R425). Jul 1943. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00
This is a transcript of a recorded talk prepared for the seminar afloat, Jul. 11, 1943. The Mark II indicator amplifier control unit is intended to replace the standard AC indicator amplifier control unit as manufactured by Submarine Signal Co. and RCA Manufacturing Co. Functionally speaking, there are four main differences between the Mark II unit and the standard QC stack. These four features are described and discussed in this paper.

PB L 81133. GRAMMUELLER (HERR). Radiation coupling of two dipoles with reflectors, Part II. (AAF T-2 Translation 1102; ZWB UM 4021) Aug 1947. 34 p. Price: Microfilm-$1.75 - Photostat-$4.00
The second of two reports on this subject shows that for a fixed frequency the disturbing influences of the radiation coupling can be eliminated, so far as the characteristics and the adjustment of a pair of antennas is concerned. This is accomplished by proper measurements of the antenna base point impedance, as well as by connection of ideal transverse quadripoles between the two feeders. Photographs, diagrams, and graphs are included.

PB L 81044. HANSON, R. O. The triple head recorder. (Columbia Univ Div War Res Memo P 37/R1298). Feb 1945. 26 p. Price: Microfilm-$1.00 - Photostat-$2.00
The purpose of the triple head recorder was to provide means of recording the outputs of three devices simultaneously and in synchronism so that they could be reproduced and their relative qualities compared at some later time. Apparatus constructed using these plans were found to have several difficulties which prompted redesigning the equipment. The second version of this recording channel was completed June, 1943. A complete description of both versions of this triple head recorder is given in this report. Schematics are included.

PB L 81045. HANSON, R. O. The wide range 22-second recorder-reproducer set. (Columbia Univ Div War Res Memo P37/R1288). Jan 1945. 30 p. Price: Microfilm-$1.00-Photostat-$2.00
This report describes in detail the equipment mentioned in the title. A number of diagrams, photographs and charts are included.

PB L 81202. HULTGREN, H. I. Chemical recorder range scale for use with Mark II echo ranging equipment. (Columbia Univ Div of War Res Rept D20/R451). Jul 1943. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00
The Mark II echo ranging equipment sent to Key West and San Diego were provided with chemical recorder range scales, but it was found that they were not entirely satisfactory. This memorandum explains the reason for the gages not being satisfactory and also describe the changes made to make them satisfactory. Two drawings are included.

PB L 81906. MEZGER, G. ROBERT. Electronic methods of observation. Part 7. A stable direct-coupled amplifier. (David W. Taylor Model Basin Rept R-86) Mar 1943. 18 p. Price: Microfilm-$1.25 - Photostat-$2.00
A method is described for coupling between stages of a vacuum-tube amplifier which introduces no attenuation and which has uniform response as a function of frequency from zero cycles per second to those frequencies at which the limitations of ordinary resistance-capacitance coupled amplifiers become effective. The coupling element is self-stabilizing and acts to eliminate the drifts usually encountered in amplifiers of this type. It permits both the input and the output signals to vary about ground potential. A design is given for a typical cascaded amplifier which employs this coupling element and which has a voltage gain of 5000 times. Diagrams are included.

PB L 81862 and PB L 81863. REICH, HERBERT J., ed. Very high-frequency techniques. 2 volumes. 1st ed. 1947. v. 1 - 567 p.; v. 2 - 507 p. Available from McGraw-Hill Book Company, Inc., 330 West 42nd Street, New York 18, N. Y., at $14.00 per set.
This work presents those techniques, at frequencies above about 100 Mc, that are of general interest and value and which were developed at the Radio Research Laboratory. The Radio Research Laboratory was a large central laboratory established by the Office of Scientific Research and Development for developing countermeasures against enemy radar. It was operated by Harvard University and came under Division 15 of the National Defense Research Committee. The Radio Research Laboratory was unique in being the only large temporary wartime OSRD laboratory concerned in a major way with the extension of continuous-wave techniques to the high radio frequencies used in radar work. Such techniques were the basis of most prewar activity in radio below 100 Mc, and it is expected that they will be important in the exploitation of the higher frequencies that the war has made available. "Very High-frequency Techniques" represents a summary of the methods, theories, and circuits used by the Radio Research Laboratory that it is believed will be of general interest to radio engineers and physicists. It provides a comprehensive treatment of antennas, direction finding systems, generation of continuous-wave power, and

Electronics (contd)

reception of signals. The material presented is based on knowledge gained from many sources. Much of it originated with the Radio Research Laboratory staff, but much of it also came directly or indirectly from the numerous NDRC, industrial, and service groups with whom the Radio Research Laboratory worked in close cooperation. The authors of the individual chapters were in every instance closely associated with the work they report but the information they have compiled should be regarded as the results of the efforts of teams, of which the authors were important, but not the only members. The characteristics of the circuits and techniques treated were of necessity chosen primarily to meet the needs of the countermeasures program. Among these requirements were broad-band modulation and amplification, wide frequency range, and simplicity of tuning as contrasted with fixed-frequency operation of radar. This book does not pretend to be either a textbook or a comprehensive treatise covering all aspects of the v-h-f field. As a handbook or reference work, however, it should enable research physicists and engineers to save considerable time and effort in the solution of problems. It will undoubtedly also serve as a valuable source of information to authors of textbooks. The material is sufficiently fundamental and new, and the range of subjects covered so great, that every worker in the v-h-f field will find at least some part of the material of interest.

PB L 74082. BÖHRES VADEMECUM, BERLIN. Manual of German radio tubes. (FIAT Microfilm Reel CC 239, Frames 1-108) 1945-1946. 108 f. Price: Microfilm-$2.00 - Enlargement print-$11.00

This FIAT microfilm reel consists of a manual of German radio tubes, 1945-1946 edition. In four languages: German, French, English and Russian.

PB L 81206. SAWYER, C.R. Harvard demonstrations, May 26, 1943, and conferences with Lieut. Comdr. Bennett, II. (Columbia Univ. Div of War Res Rept D20/DM3/R399). May 1943. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00

This report covers demonstration of several developments in order to obtain official evaluation of the proposed devices, and particularly to obtain authorization for inclusion of the developments in the so-called July, October and November echo-ranging systems being designed by RCA and Submarine Signal companies.

PB L 81205. SHAFFER, WAYNE O. Mark II D-20 console type receiving rack as installed on USS PC451 at Key West, Florida. (Columbia Univ Div of War Res Rept D20/R395). Jun 1943. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00

This memorandum deals with the installation of a MARK II D-20 receiving rack aboard the USS PC451 and the tests made subsequently with the equipment.

PB L 84194. U. S. WAR DEPARTMENT. Maintenance and operation of crystal grinding equipment and crystal finishing techniques. (Tech Manual 11-2540) Sep 1944. 260 f. Price: Microfilm-$7.00 - Enlargement print-$27.00

Generators, Motors, Transmission, Distribution and Allied Equipment

PB L 74377. ALLGEMEINE ELEKTRICITAETS-GESELLSCHAFT, BERLIN. Laboratory reports on research in anti-aircraft control equipment, servo-motors, torque intensifiers etc. (FIAT Microfilm Reel GG-37, Frames 394-713) 1936-1944. 320 f. Price: Microfilm-$4.00 - Enlargement print-$32.00.

This FIAT microfilm reel consists of 33 laboratory reports on research in anti-aircraft searchlight and director control equipment, motor controls, torque intensifiers, and allied electric and radio devices as listed below. Individual items will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $4.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
394-407 PB L 74377	Remote control equipment "S". 1937. In German. Drawings.	$1.50
408-410 PB L 74377	Loop antenna drive control. 1938. In German. Drawings.	1.50
411-416 PB L 74377	"Sperry" searchlight control. 1940. In German. Drawings.	1.50
417-418 PB L 74377	Remote control for MKR f1 equipment. 1940. In German. Circuit diagram.	1.50
419-424 PB L 74377	Anti-aircraft battery control 42A. 1943. In German. Drawings and wiring diagram.	1.50
425-431 PB L 74377	Proposal for motor driven torque intensifier FASA. 1943. In German.	1.50
432-445 PB L 74377	Description of magnetic amplifiers for intercept receiver, 210. 1940. In German. Circuit diagrams.	1.50
446-449 PB L 74377	Explanation of the operation of searchlight control equipment SSV. 1940. In German. Circuit diagrams.	1.50
450-456 PB L 74377	Description of a ship propeller pitch indicator. 1940. In German.	1.50
457-459 PB L 74377	Description of "Pete" phase shifter control device. 1940. In German.	1.50
460-461 PB L 74377	Proposal for a mechanical end position limiter for anti-aircraft directors. 1942. In German.	1.50
462-467 PB L 74377	Explanation of the operation of FVA phase shifter control. 1940. In German.	1.50
468-473 PB L 74377	Description of mechanical torque intensifiers for electric motors. 1940. In German. Drawings.	1.50
474-482 PB L 74377	Explanation of the operation of FVAS phase selector. 1940. In German.	1.50
483-495 PB L 74377	Description and operating instructions for remote control of F4 f 1. phase selector. 1940. In German.	1.50
496-513 PB L 74377	Report on experiments with "Rmero" brake rings for torque intensifiers. 1942. In German.	2.00
514-521 PB L 74377	Measurement of torque intensification of intensifier FASA. 1942. In German. Graphs.	1.50
522-528 PB L 74377	Effect of contact resistance in stator leads for precision azimuth transmission. 1943. In German. Diagrams.	1.50
529-531 PB L 74377	Magnet operated rotary valve on motor FA 10. 1943. In German.	1.50

Generators (contd)

533-536 PB L 74377 Switching device from coarse to precision control for anti-aircraft directors. 1943. In German. 1.50

537-544 PB L 74377 Speed regulation of a servo-motor by means of a choke coil. 1943. In German. 1.50

545-575 PB L 74377 Examination of the AEG GAO 25 special motor. 1943. In German. 3.50

576-580 PB L 74377 Examination of four experimental motors similar to the L mot 700/700 da. 1943. In German. 1.50

581-594 PB L 74377 Report on the demonstration of a lateral stabilization device. 1937. In German. 1.50

595-606 PB L 74377 Partial stabilization of ships. 1936. In German. 1.50

607-610 PB L 74377 Measurements on the WRA 10A hydraulic torque intensifier. 1943. In German. 1.50

611-632 PB L 74377 New control system for follow-up motors. 1943. In German. 2.50

633-642 PB L 74377 Measurement on FDSL-B gun station. 1944. In German. 1.50

643-686 PB L 74377 Description and operating instructions for AMG remote control of "Würz-Riese" anti-aircraft director equipment. 1942. In German. 4.50

687-692 PB L 74377 Test of Kf motor drive. 1944. In German. 1.50

693-698 PB L 74377 Arrangement for the compensation of errors in hydraulic torque intensifiers. 1944. In German. 1.50

699-701 PB L 74377 Phase-sensitive rectifier circuits. 1944. In German. 1.50

702-713 PB L 74377 Lateral stabilization of range finders in revolving turrets. 1937. In German. 1.50

PB L 73627. BRILL, H. and KREBS, H. Structural examination of selenium dry-disk rectifier plates. (FIAT Microfilm Reel AA 239, Frames 1-53). 1943. 53 f. Price: Microfilm-$1.50 - Enlargement Print-$5.50
This FIAT microfilm reel consists of a report on the results of X-ray examination of selenium plates for dry-disk rectifiers manufactured by the Süddeutsche Apparatefabrik, Munich and the Allgemeine Elektricitäts-Gesellschaft, Berlin. Structural changes and resulting changes in electrical properties of the plates are described and their dependence on manufacturing conditions and methods determined and explained. English translation of this report will be found in FIAT Microfilm Reel F8, PB 74284, frames 92-136.

PB L 74977. ELECTROACOUSTIC K.G., KIEL, GERMANY. Parts lists and drawings for electro-optical lathe control devices. (FIAT Microfilm Reel K97, Frames 1-773). 1943. 773 f. Price: Microfilm-$6.00 - Enlargement Print-$77.50
This FIAT microfilm reel consists of parts lists and drawings for electro-optical lathe control devices. The documents are identified merely by the principal code number 104. In German.

PB L 82055. ELECTROACOUSTIC K.G., KIEL, GERMANY. Parts lists and drawings for lathe and milling machine control devices. (FIAT Microfilm Reel K-99, Frames 1485-2059C). 1941-1944. 578 f. Price: Microfilm-$7.00-Enlargement Print-$59.00
This FIAT microfilm reel consists of parts lists and drawings for lathe and milling machine electro-optical control devices manufactured by the Electroacoustic K. G. They apparently cover three main types of controls identified merely by code numbers in the 104, 114 and 119 groups. In German.

PB L 12253-T. LORENZ, C., A. G., BERLIN. Electric generator voltage regulations. (Translation of PB 12253). Sep 1944. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00
For abstract of original German article see this Bibliography, vol. 3, p. 386.

FUELS AND LUBRICANTS

PB L 87559. GRAF, ERNST G. Gas and fuel testing methods and apparatus developed at the Institute of Technology of fuels at the Technical University of Vienna. Jan 1947. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00
A brief extract is given describing methods and apparatus for testing fuels at the Technical University of Vienna where the aim is the education of engineers for research and practice with special knowledge in the fields of mechanical, thermal, and chemical refining of coals, preferably refining by gasification, and of combustion processes of coals, and a general knowledge on both chemistry and mechanical engineering.

PB L 87560. GRAF, ERNST G. Graphical representations of gas producer processes. May 1947. 20 p. Price: Microfilm-$1.25 - Photostat-$2.00
In this report Dr. Graf presents the development of a gasification trapezoid by means of equations, tables, and graphs.

PB L 87561. GRAF, ERNST G. Purpose and contents of the "Short textbook of the technology of fuels." Apr 1947. 18 p. Price: Microfilm-$1.25 - Photostat-$2.00
Here are presented the contents, the prefaces to both of the editions and the introduction to the "Short Textbook of the Technology of Fuels," a German work by W. J. Müller and E. G. Graf, first published in 1939 and revised in 1945, according to translations by the author himself.

PB L 20860. I.G. FARBENINDUSTRIE A.G. File of Dr. Simon. Papers on hydrogenation, aromatization and paraffin oxidation. (FIAT Microfilm Reel LF 99 (TOM 201), Frames 1-782) Jan 1946. 782 f. Price: Microfilm-$6.00 - Enlargement Print-$78.50
Much of this reel is more or less illegible, some parts completely so. Some parts can be read with difficulty from the microfilm reel and will reproduce very poorly. Individual items are listed below and will be available as enlargement prints only. The entire microfilm reel may be purchased in microfilm form for $6.00. Please include PB and frame numbers when ordering individual items from this microfilm reel.

Frames	Title	Price
1-20 PB L 20860	Influence of the temperature on the reactions taking place during the hydrogenation of bituminous coal liquefaction middle oil over catalysts 5058, 7846, and 8376. In German.	$2.00

21-24 PB L 20860 — Contribution to the theory of sump phase. In German. 1.50

25 PB L 20860 — Benzination of DHD-residue. In German. 1.50
Poor legibility.

26-28 PB L 20860 — Experiments concerned with the testing of the motor behavior of auto hydrogenated polymer gasoline. In German. 1.50
Poor legibility.

29-35 PB L 20860 — Progress report. October 1943. Small gas phase furnace. In German. 1.50
Practially illegible.

36-39 PB L 20860 — Pressure refining of sump gasolines at different temperatures. In German. 1.50

40-41 PB L 20860 — These frame numbers are illegible.

42-43 PB L 20860 — Gas phase catalysts. In German. 1.50

44-48 PB L 20860 — Recent investigations in the field of benzination catalysts. In German. 1.50

49-51 PB L 20860 — Concerns: Backflow due to a break in a high pressure pipe line. In German. 1.50

52-56 PB L 20860 — The influence of the products partial pressure on the aromatization of Scholven bituminous coal liquefaction middle oil over aluminia-Terrana catalyst 8688. In German. 1.50
Poor legibility.

57-64 PB L 20860 — The influence of the nitrogen content of oils on their capacity for benzination. In German. 1.50

65-67 PB L 20860 — Removal of the heat of reaction in gas phase hydrogenation by running the circulating gas while hot. In German. 1.50

68-69 PB L 20860 — The testing of regenerated 6434 catalysts. In German. 1.50
Poor legibility.

70 PB L 20860 — Experimental basis for the processing of heavy oils with solid catalysts. In German. 1.50

71 PB L 20860 — The influence of sulfurization on the 250 atm aromatization of bituminous coal liquefaction middle oil with alumina-Terrana catalyst. In German. 1.50

72-76 PB L 20860 — The influence of adding organic nitrogen compounds on the results of benzination of crude oil-gas oil over catalyst 6434. In German. 1.50

77-85 PB L 20860 — The effects of W, Ni, Co and Fe as active components on alumina pre-hydrogenation catalysts. In German. 1.50

86-104 PB L 20860 — Our supply of liquid fuels. In German. 2.00

105-108 PB L 20860 — The mechanism of hydrogenation - catalysis. In German. 1.50

109-110 PB L 20860 — Gasoline from bituminous coal via fuel oil-diesel oil. Estimate. In German. 1.50

111-112 PB L 20860 — Decreasing and increasing temperature during the hydrogenation of Upper Silesian bituminous coal. In German. 1.50

113-114 PB L 20860 — Centrifugal experiments with sludge from the Brux tar chamber. In German. 1.50

115-116 PB L 20860 — The action of sodium sulfide on stripper heavy oil. In German. 1.50
Poor legibility.

117-121 PB L 20860 — New benzination catalysts. Benzination catalysts free from tungsten of the oxide-fluoride of Si, Al and Fe type. In German. 1.50

122-127 PB L 20860 — Benzination of P 1203/8376 B-K' oil over 6434 and 8797. In German.

128-131 PB L 20860 — Contribution to the theory of ash-balance. In German. 1.50

132-140 PB L 20860 — Ash balances of autoclave experiments with bituminous coals. In German. 1.50

141-143 PB L 20860 — The heating of cracking residues. In German. 1.50

144-146 PB L 20860 — Replacement of ammonium chloride with Scholven coal. In German. 1.50

147-150 PB L 20860 — Analysis of low temperature carbonization residues from shale for their possible use as sump phase catalysts. In German. 1.50

151-153 PB L 20860 — Older hydrogenation experiments with arsenic compounds. In German. 1.50

154-156 PB L 20860 — Starting of coal hydrogenation in the sump phase. In German. 1.50
Poor legibility.

157-158 PB L 20860 — Measurements concerning heat transfer in bituminous coal paste. In German. 1.50

159-160 PB L 20860 — The problem of the starting temperature. In German. 1.50
Poor legibility.

161-163 PB L 20860 — Influence of the nitrogen content on the capability of oils for being benzinated. In German. 1.50

164 PB L 20860 — Note on the production of iso-heptane from normal heptane at 20 atms. over catalyst 5058 with hydrochloric acid addition. In German. 1.50

165-168 PB L 20860 — Isomerisation of hydrocarbons. In German. 1.50

169-170 PB L 20860 — The butane and iso-butane content in the gases from benzination and aromatization with bleaching earth catalysts. In German. 1.50

171-188 PB L 20860 — Processing of bituminous coal liquefaction middle oil over pre-hydrogenation/7846 W 250, benzination and DHD. In German. 2.00
Poor legibility.

189-190 PB L 20860 — The influence of temperature on the results of the pre-hydrogenation with concentrated and diluted catalysts. In German. 1.50

191-193 PB L 20860 — Dehydrogenation and refining of polymer gasoline. In German. 1.50

194-196 PB L 20860 — Influence of the addition of organic nitrogen compounds on the results of the benzination of crude oil-gas oil over catalyst 6434.II. In German. 1.50
One page illegible.

197-204 PB L 20860 — Requirements of scarce metals in the gaseous phase in these production

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methods for gasoline which are most important at the present time. In German. 1.50

205-213 PB L 20860 Influence of the re-cycle ratio on the 250 atm. aromatization of bituminous coal liquefaction middle oil over alumina-Terrana catalyst 8688. In German. 1.50
Legibility of several pages poor.

214-222 PB L 20860 The dependence of knocking properties of gasolines and gasoline fractions on the starting material. In German. 1.50

223-227 PB L 20860 The behavior of acid and basic components of bituminous coal liquefaction middle oil during the prehydrogenation with alumina catalysts. In German. 1.50

228-232 PB L 20860 Processing of vacuum distillate from stripper heavy oil at 600 atm. over solid-bed catalyst 8376 for diesel oil with low pour point. In German. 1.50

233-244 PB L 20860 Cracking of heavy stripper oil from bituminous coal over solid-bed catalyst at 250 and 600 atm. In German. 1.50

245-247 PB L 20860 Calculations bearing on the problem of 300 vs. 700 atm. In German. 1.50

248-249 PB L 20860 Improvement of the low temperature carbonization yield in the separator. In German. 1.50

250 PB L 20860 Testing of some new pre-hydrogenation catalysts. In German. 1.50

251-253 PB L 20860 Prehydrogenation of P 1271 with catalyst 8807/8376 and 8806/8376. In German. 1.50

254-257 PB L 20860 Laboratory and industrial experiments aiming at increasing the yield of oil from the low temperature carbonization of residues containing asphalt. In German. 1.50

258-262 PB L 20860 Relations between coal analyses and behavior during hydrogenation. In German. 1.50
Poor legibility.

263-265 PB L 20860 The effect of sulfur addition on benzination over catalyst 6434. In German. 1.50
Poor legibility.

266-268 PB L 20860 Crystallographic report on ammonium sulfotungstate. In German. 1.50
Partly illegible.

269-274 PB L 20860 Experiments in the 1 ltr. furnace with sulfur as sump phase catalyst. In German. 1.50

275 PB L 20860 Notes on the splitting effect of tungsten sulfide. In German. 1.50

276-278 PB L 20860 Possible replacement of ammonium chloride in the hydrogenation of Ruhr coal. In German. 1.50

279-289 PB L 20860 Influence of the size and density of the catalyst pellets on the benzination and prehydrogenation with catalyst 5058. In German. 1.50

290-291 PB L 20860 Filtration of sludge with the addition of higher alcohols from the iso-butylalcohol production. In German. 1.50

292-310 PB L 20860 Autoclave experiments aiming at the cracking of paraffins with tungsten sulfide by means of hydrogenation. In German. 2.00

311-315 PB L 20860 New results concerning the lattice disturbance of the active tungsten sulfide. In German. 1.50

316-319 PB L 20860 Experimental results with tungsten catalysts. In German. 1.50

320-325 PB L 20860 Tungsten oxides. In German. 1.50
Two frames barely legible.

326-327 PB L 20860 Research on the principles of catalysis. In German. 1.50

328-355 PB L 20860 Addition of sodium sulfide in the hydrogenation of bituminous coal. In German. 3.00
Legibility of several frames poor.

356-358 PB L 20860 Sulfur absorption of the unsulfurated Bayer mass under high pressure. In German. 1.50

359 PB L 20860 Sensitivity to nitrogen and other disturbance. A comparison between catalysts 8797 and 6434. In German. 1.50

360-367 PB L 20860 Extended prehydrogenation tests of bituminous coal and lignite liquefaction middle products over catalyst 8376 - 7846 W. 250 without sulfur addition to the products. In German. 1.50

368-381 PB L 20860 New benzination catalysts. In German. 1.50

382-384 PB L 20860 Catalyst 5058 in combination with catalyst 7846. In German. 1.50

385 PB L 20860 This frame number is missing.

386-398 PB L 20860 Experiments in the 1 ltr. furnace aiming at the cracking of stripper heavy oil from bituminous coal at 250 atm. with solid-bed, regenerative catalyst. In German. 1.50

399-400 PB L 20860 Determination of aromatic compounds in gasoline by light absorption measurement. In German. 1.50

401-403 PB L 20860 Production of vaseline from petrolatum or propane de-asphalted and de-waxed vacuum residue from German crude oil. In German. 1.50

404-409 and 4 unnumbered frames PB L 20860 Hydrogenation of old aviation lubricant. (P 1580) In German. 1.50

410-413 PB L 20860 Conference with OHW at Ludwigshafen on the 25th of October 1943. Subject: Results obtained with small scale arrangement. In German. 1.50

414-415 PB L 20860 Directions for the mode of construction of high pressure hydrogenation chambers. In German. 1.50
Legibility poor.

416-417 PB L 20860 Exchange of experience: Sieve analysis of coal and coal paste. In German. 1.50

418-423 PB L 20860 Electric pre-heaters, chamber 2. In German. 1.50

424-427 PB L 20860 — Exchange of experience: electric pre-heaters. In German. 1.50
Only one drawing legibile.

428-429 PB L 20860 — Exchange of experience: electric pre-heaters. In German. 1.50
Introductory page illegible.

430-454 PB L 20860 — Questionaire for collecting the data necessary for calculating gas hydrogenation products. In German. 2.50
Partly illegible.

455-470 PB L 20860 — Exchange of experience on Dec 4, 1941 at Ludwigshafen. In German. 2.00
Part illegible - Legibility of remaining portion poor.

471-474 PB L 20860 — These frames are illegible.

475-532 PB L 20860 — Calculation of the amount of "hy-gas" which is likely to accure in the "Hibernia" coal hydrogenation. In German. 6.00
Text completely illegible - only two drawings legible.

533-535 PB L 20860 — These frames are illegible.

536-539 PB L 20860 — Fuel oil conference at Gelsenberg on January 5, 1942. In German. 1.50
Legibility very poor.

540-549 PB L 20860 — These frames are illegible.

550-554 PB L 20860 — Report on a conference held at the premises of Mineralöl-Baugesellschaft Limited, Berlin, on February 14, 1941. Subject: Coal preparation plants. In German. 1.50
Legibility poor.

555-560 PB L 20860 — Conference at Scholven. In German. 1.50
Legibility poor.

561-563 PB L 20860 — Heating up by means of surer-heated hydrogen. In German. 1.50
Legibility poor.

564-575 PB L 20860 — Relief of the sump phase pre-heaters. In German. 1.50
Several frames barely legible.

576-578 PB L 20860 — The chemical composition of the crusts formed in the pre-heaters. In German. 1.50

579-581 PB L 20860 — Velocities in the high pressure furnaces. In German. 1.50

582-588 PB L 20860 — The gas circulation in 700 atm. hydrogenation chambers, particularly from the point of view of measuring technique. In German. 1.50
Legibility poor.

589-597 PB L 20860 — What is to be found in the literature on gas hydrogenation products? In German. 1.50

598-611 PB L 20860 — Exchange of experience: Gas hydrogenation products. In German. 1.50
Legibility poor.

612-613 PB L 20860 — High pressure experiments. In German. 1.50

614-623 PB L 20860 — Hydrogen partial pressure in the 7019 gas circulation. In German. 1.50

624-630 PB L 20860 — Comparison of the costs of 7019, 5058 and 6434 chambers. In German. 1.50
Several frames barely legible.

631-635 PB L 20860 — Solubility of the hydrogenation components in the sump phase in the bituminous coal hydrogenation at 700 and 300 atms. In German. 1.50

636-637 PB L 20860 — Possibility for the production of phenol in the hydrogenation of coal. In German. 1.50

638-653 PB L 20860 — Polycyclic aromatic compounds from hydrogenation products. In German. 2.00
Legibility of several frames poor.

654-673 PB L 20860 — Corona. In German. 2.00

674-679 PB L 20860 — Aromatization of bituminous coal liquefaction middle oil. Scholven P 1271, at 600 atm. over the new Welheim catalyst (Lu Nr. 8213) produced at Ludwigshafen. In German. 1.50
Legibility very poor.

680-687 PB L 20860 — Notes on aromatization at 250 and 600 atms. In German. 1.50
Legibility very poor.

688-692 PB L 20860 — Behavior of aromatic compounds and aromatic gasolines on the addition of lead tetra-ethyl. In German. 1.50

693-700 PB L 20860 — Hydrogenation and low temperature carbonization in the field of synthetic motor fuel production. In German. 1.50

701-730 PB L 20860 — These frame numbers are missing.

731-741 PB L 20860 — Ester from the residual acids of paraffin oxidation. In German. 1.50

742-754 PB L 20860 — Experiments aiming at the production of paraffins from tars and lignite extracts. In German. 1.50

755-759 PB L 20860 — Experiments aiming at the production of paraffin from tars. In German. 1.50

760-765 PB L 20860 — Method for the determination of small quantities of dicarboxylic acids in fatty acid mixtures by the use of thallium salts. In German. 1.50

766-773 PB L 20860 — Testing of a soft paraffin of the Herschan-Meissenfelser Braunkohlen A.G. for its suitability for fatty acid production. In German. 1.50

774-782 PB L 17664 — Saponification and splitting of paraffin oxidation products during the cycle. In German. 1.50

PB L 17664. I. G. FARBENINDUSTRIE A. G. Papers and reports on various researches and processes of the Hochdruckversuche Laboratories, and Butan-Tanol plant data. (FIAT Microfilm Reel LF 67 (TOM 165), Frames 1-967) Jan 1946. 966 f. Price: Microfilm-$6.00 - Enlargement print-$97.00
The 95 individual items of this FIAT microfilm reel are listed below. They will be available as enlargement prints only; the entire reel may be purchased in microfils form for $6.00. Please give PB number and frame numbers when ordering individual items from this microfils reel. In German.

Frames	Title	Price
	Reports on Prehydrogenation. Folder No. E-2E/III-A-4.	
1-9 PB L 17664	The effect of W, Ni, Co and Fe as active components on alumina prehydrogenation catalyst. In German. Two frames are illegible.	$1.50
10-20 PB L 17664	Influence of the degree of hydrogenation (AP of B middle oil) on the results of the 5176/6434 processing	

of S-middle oil Scholven. In German. 1.50
Frames 17-20 are illegible.

21-29 PB L 17664 — The effect of W, V, Ni, Co and Fe as active components on alumina prehydrogenation catalysts. In German. 1.50

30-54 PB L 17664 — Use of the clay-W-Ni prehydrogenation catalyst 8376 - 7846 W 250 for various products. In German. 2.50

55-58 PB L 17664 — Testing of new prehydrogenation catalysts. In German. 1.50

59-82 PB L 17664 — Report on prehydrogenation test with middle oils from coal liquefaction over catalyst 7846 W 250 on a pivot plant scale. In German. 2.50

83-97 PB L 17664 — Experiments for the prehydrogenation of coal liquefaction oil over catalyst 7846 W 250. In German. 1.50
Several frames are illegible.

98-132 PB L 17664 — Use of the clay-W-Ni-prehydrogenation catalyst 8376 - 7846 for various products. In German. 3.50
All graphs are illegible.

133-143 PB L 17664 — Testing of new prehydrogenation catalysts in 30-cc-lead bath furnaces. In German. 1.50

144-149 PB L 17664 — The hydrogenation activity of alumina-tungsten-nickel catalysts prepared in different ways. In German. 1.50

150-157 PB L 17664 — The influence of temperature on the results of prehydrogenation with catalyst 7846. In German. 1.50

158-170 PB L 17664 — The influence of through-put, partial pressure of oil and contact time on the results of prehydrogenation with catalyst 7846. In German. 1.50
All graphs are illegible.

171-190 PB L 17664 — Catalyst 7846 for prehydrogenation with Scholven middle oil. In German. 2.00

191-198 PB L 17664 — Further tests with alumina-Mo-Ni catalysts. In German. 1.50

199-221 PB L 17664 — Development of the prehydrogenation catalysts. In German. 2.50
Three graphs are illegible.

222-224 PB L 17664 — These frames are illegible.

225-241 PB L 17664 — Experiments with prehydrogenation catalysts. In German. 2.00

Reports on aromatization. Folder No. S-28/III-A-5

242-255 PB L 17664 — 600 atm. aromatization of coal liquefaction middle oil as preliminary stage in the production of DHD high efficiency motor fuels. In German. 1.50
Four graphs are illegible.

256-260 PB L 17664 — Influence of the partial pressure of the product in the aromatization of coal liquefaction middle oil Scholven over alumina-Terrana catalyst 8688. In German. 1.50

261-275 PB L 17664 — Description of small scale experiments as preparatory work for the large scale experiment in chamber 805 and of a new continuous experiment concerning "Benzinierung" at 600 atm. of coal liquefaction middle oil with Terrana catalysts. In German. 1.50
Three graphs are illegible.

276-284 PB L 17664 — Influence of the recycle conditions on the 250 atm. aromatization of coal liquefaction middle oil over alumina-Terrana catalyst 8688. In German. 1.50
Three graphs are illegible.

285-298 PB L 17664 — Aromatization at 250 atm with alumina-Terrana catalyst of the type 8688. In German. 1.50
One graph is illegible.

299-305 PB L 17664 — The influence of the through-put on the 250 atm. aromatization of coal liquefaction middle oil with alumina-Terrana catalyst. In German. 1.50
Two graphs are illegible.

306-313 PB L 17664 — The influence of pressure on the aromatization of coal liquefaction middle oil with alumina-Terrana catalyst. In German. 1.50
Three graphs are illegible.

314-326 PB L 17664 — The influence of temperature and through-put on the 600 atm. aromatization of coal liquefaction middle oil with Terrana catalyst. In German. 1.50
Two graphs are illegible.

327-331 PB L 17664 — Comparison of "Benzination" with natural bleaching earth (6109) and synthetic aluminum silicate (6752) at 600 atm. In German. 1.50

332-336 PB L 17664 — Influence of sulfurization on the single-stage 600 atm. "Benzination" of coal liquefaction middle oil with Terrana catalyst. In German. 1.50

337-341 PB L 17664 — Testing of new aromatization catalysts in 25-cc-lead bath furnaces at 250 atm. In German. 1.50

342-356 PB L 17664 — Tests of aromatization catalysts at 250 atm. in 100-cc-lead bath furnaces (1st report). In German. 1.50
Two graphs are illegible.

357-358 PB L 17664 — Testing of a batch of catalysts 7019 for the bleaching earth process. In German. 1.50

359-380 PB L 17664 — Aromatization at 250 atm. Development of catalysts. In German. 2.50
Several graphs are illegible.

381-397 PB L 17664 — Catalytic tests concerning 250 and 600 atm. aromatization in 1-ltr.-furnaces with alumina, bleaching earth and synthetic silicate catalysts. In German. 2.00
Three graphs are illegible.

398-402 PB L 17664 — Preparation of catalysts. In German. 1.50

403-414 PB L 17664 — Aromatization of middle oil derived from coal liquefaction. In German. 1.50

415-418 PB L 17664 — Note on the two stage production of gasoline (rich in aromatics) from coal liquefaction. In German. 1.50

419-425 PB L 17664 — Amount of catalyst 7019 loss in the normal operation with coal liquefaction middle oil. In German. 1.50

426-427 PB L 17664 — Once more the problem 300 versus 600 atm. In German. 1.50

Papers on Octane Numbers of Aviation Gasolines, etc. Folder No. S-28/III-A-10

427a-427d PB L 17664 — The dependence of the mixture octane number on the starting gasoline. In German. 1.50

Fuels and Lubricants (contd)

427e-436 PB L 17664 — Octane numbers of the paraffins. In German. 1.50
Six graphs are illegible.

437-446 PB L 17664 — Octane numbers of aromatics. In German. 1.50
Five graphs are illegible.

447-460 PB L 17664 — Octane numbers of naphthenes. In German. 1.50
Ten graphs are illegible.

461-468 PB L 17664 — Calculation of octane numbers of gasolines. In German. 1.50
One graph is illegible.

469-483 PB L 17664 — Aromatization catalysis at 250 and 600 atm. In German. 1.50

484-491 PB L 17664 — Note on the aromatization at 250 and 600 atm. In German. 1.50

492-499 PB L 17664 — Use of UO_2 in aromatization catalysis. In German. 1.50

500-502 PB L 17664 — Dehydrogenation tests at atmospheric pressure for the testing of aromatization catalysts. In German. 1.50

503-505 PB L 17664 — Dehydrogenation experiments for testing of aromatization catalysts. In German. 1.50

506-517 PB L 17664 — These frames are illegible.

518-522 PB L 17664 — Influence of (various) catalyst components on aromatization. In German. 1.50

Papers on Chemical Equilibria. Folder No. S-28/III-B-8.

523-534 PB L 17664 — Aromatics: naphthene equilibrium. In German. 1.50

535-536 PB L 17664 — Note on the conversion of sodium carbonate into sodium sulfide during the sulfurization of the "Bayer Mass" by means of either pure hydrogen sulfide or a mixture of hydrogen sulfide and carbon dioxide. In German. 1.50

537-542 PB L 17664 — The status of the equilibrium during the dehydrogenation of cycloparaffins to aromatics. In German. 1.50

543-560 PB L 17664 — Thermodynamic data on the bonds and stability of hydrocarbons. In German. 2.00
Several graphs are illegible.

561-564 PB L 17664 — Some pressure hydrogenation equilibria calculated by means of Nernst's approximation formula. In German. 1.50

565-572 PB L 17664 — Equilibria of isomers of aliphatic hydrocarbons. In German. 1.50

573-577 PB L 17664 — The possibility of formation and reduction of iron and chromium nitride under hydrogenation conditions. In German. 1.50

Butan-tanol Plant Data. Folder No. S-28/III-B-9

578-584 PB L 17664 — Installation of a butanol-"Tanol" experimental plant with a capacity of approximately 20,000 tons per year E T 100 at Heydebreck. In German. 1.50

585 PB L 17664 — Butane dehydrogenation (74,000 tons per year). Rough numerical estimate of requirements. In German. 1.50

586-590 PB L 17664 — Dehydrogenation of butane. In German. 1.50
Several graphs are illegible.

Miscellaneous Papers on Hydrogenation of Various Coals in 10-ltr. Furnaces. Folder No. S-28/III-A-6.

591-593 PB L 17664 — Working of Scholven coal (Zweckel-coal) with iron catalysts and chlorine. In German. 1.50

594-595 PB L 17664 — The working of coal plus low temperature carbonization tar to produce fuel oil and briquetting agents. In German. 1.50

596 PB L 17664 — Development of the experiment carried out with topped Brüx tar in the 10-ltr. furnace. In German. 1.50

597-643 PB L 17664 — Processing of Silesian coal "K 1180" (Beuthen mine) to gasoline and middle oil at 600 atm. in the 10-ltr. furnace (431 and 451). In German. 5.00

644-674 PB L 17664 — Processing of Silesian coal 1160 (Preussen mine) to an excess of heavy oil at 600 atm. in the 10-ltr. furnace. In German. 3.50

675 PB L 17664 — Concentration of middle oil in the coal Sump phase under different conditions of operation. In German. 1.50

676-693 PB L 17664 — Heating of coal paste (experimental work). In German. 2.00

694-703 PB L 17664 — Sampling and methods of analysis on the 10-ltr. furnace. In German. 1.50

704-735 PB L 17664 — Processing of Silesian coal "K 1174" to an excess in heavy oil at 600 atm. in the 10-ltr. furnace. In German. 3.50

736 PB L 17664 — Hydrogenation of old coal. In German. 1.50

737-763 PB L 17664 — Processing of Silesian coal "K 1160" (Prussian mine) to gasoline and middle oil at 600 atm. in the 10-ltr. furnace. In German. 3.00

764-768 PB L 17664 — The influence of the middle oil content in the diluent oil on the composition of the newly formed products in the working of Silesian coal K 1197 under different conditions of operation. In German. 1.50
One frame is illegible.

769-771 PB L 17664 — Processing of Silesian coal from the Heinitz mine to a high excess in heavy oil with extensive decomposition of the asphalt content. In German. 1.50
Legibility is poor.

772-773 PB L 17664 — Sump phase gasolines obtained from Silesian coal under different conditions of operation. In German. 1.50
Legibility is poor.

774 PB L 17664 — Status of the experiments in the 10-ltr. furnaces. In German. 1.50
Legibility is poor.

775-776 PB L 17664 — Working up of residues on the industrial scale and in the 10-ltr. furnace. In German. 1.50
Legibility is poor.

777-778 PB L 17664 — Composition of the gases in the processing of Silesian coal and high temper-

ature coal tars to heavy oil at 600 atm. In German. 1.50
Legibility is poor.

779-782 PB L 17664 — The use of very large through-puts in the processing of Silesian coal to a maximum excess in heavy oil. In German. 1.50

783-817 PB L 17664 — Processing of Silesian coal "K 1174" to gasoline and middle oil at 600 atm. in the 10-ltr. furnace. In German. 3.50
Legibility is poor.

818-823 PB L 17664 — Processing of coal to varying amounts of heavy oil excess. In German. 1.50

824-856 PB L 17664 — Silesian coal 1116 processed to gasoline and middle oil at 600 atm. in the 10-ltr. furnace. In German. 3.50

857-861 PB L 17664 — On the hydrogenation with chlorine of Upper Silesian coal which was not freed from its ash content. In German. 1.50

862-865 PB L 17664 — Pressure hydrogenation of Upper Silesian coal from the Heinitz mine in the 10-ltr. stirrer furnace. In German. 1.50
Legibility is poor.

866-872 PB L 17664 — Experimental methods applicable to 10-ltr. furnaces in the sump phase. In German. 1.50

873-876 PB L 17664 — Apparatus constants of 10-ltr. furnaces. In German. 1.50

877-878 PB L 17664 — Comparison of the 10-ltr. coal furnace with large-scale technique. In German. 1.50

879-916 PB L 17664 — Sump phase hydrogenation of Silesian coal "Herkules" in the 10-ltr. furnace at 250 and 600 atm. In German. 4.00

917-922 PB L 17664 — Pressure hydrogenation of young coal from Gelsenberg at 600 atm. to gasoline and heating oil, or to heavy Diesel oil, in the 10-ltr. furnace. In German. 1.50

Some Analytical Methods. Files of Hochdruckversuche Laboratories Lg 556. Determination Nitrogen in Middle Oils. Phenols in Middle Oils. Viscosity at High Pressures. Miscellany. Folder No. S-25/III-B-4.

923-925 PB L 17664 — Conference in Gelsenberg on Feb. 16 and 17, 1944, concerning determination of nitrogen in middle oil. In German. 1.50

926-932 PB L 17664 — Analytical directions for the determination of basic nitrogen in middle oils by means of titration with perchloric acid in glacial acetic acid. In German. 1.50
Several frames are poorly legible.

933-945 PB L 17664 — Exact, potentiometric rapid determination of the basic nitrogen in middle oils. In German. 1.50

946-954 PB L 17664 — Determination of the nitrogen content of middle oils. In German. 1.50

955-956 PB L 17664 — Determination of phenol in middle oils. In German. 1.50

957-962 PB L 17664 — High pressure viscosimeter. In German. 1.50
Legibility is poor.

963-966 PB L 17664 — Literature on coke tests (Conradson and Ramsbottom tests). In German. 1.50
Legibility is poor.

967 PB L 17664 — Determination of asphalt in sludge. In German. 1.50
Legibility is poor.

PB L 17672. I. G. FARBENINDUSTRIE A. G. Papers on fuels, lubricants, and prehydrogenation, Hochdruckversuche Laboratories. (FIAT Microfilm Reel LV-74, Frames 1-1053) Jan 1946. 1052 f. Price: Microfilm-$6.00 - Enlargement print-$105.50
127 individual items of this FIAT microfilm reel are listed below. They will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please give the above PB numbers and the frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price

Hochdruckversuche Laboratories. Papers presented at the Grand Colloquium (primarily on fuels and lubricants). Files of Dr. Pier. Folder No. S-31/IX-A-1.

1-14 PB L 17672 — Steels for high pressure work. In German. $1.50

15-22 PB L 17672 — Hydrogen fluoride in organic chemistry. In German. 1.50

23-43 PB L 17672 — Preheater problems in the sumpfphase with special consideration of the thermal pump. In German. 2.50

44-59 PB L 17672 — Faulty arrangements and lattice disturbances in crystals. In German. 2.00

60-82 PB L 17672 — The principles of thermodynamics. In German. 2.50

83-84 PB L 17672 — Round table conference. Program-suggestions. In German. 1.50

85-88 PB L 17672 — The solid state as a function of its history of formation. In German. 1.50

89-94 PB L 17672 — Catalytic studies of alloys. In German. 1.50

95-104 PB L 17672 — Latest results in the field of sulfides and oxides. In German. 1.50

105 PB L 17672 — Molecular-physical problems in lubrication. In German. 1.50

106-113 PB L 17672 — Judging lubrication with the aid of testing machines. In German. 1.50

114-117 PB L 17672 — X-ray investigation of thin layers. In German. 1.50

118-121 PB L 17672 — Hugel's views on the temperature-viscosity curve of lubricating oils. In German. 1.50

122-124 PB L 17672 — Terms and definitions in the theory of lubrication. In German. 1.50

125-128 PB L 17672 — Relations between constitution of pure hydrocarbons and their lubricating properties. In German. 1.50

129-136 PB L 17672 — Synthetic lubricating oils from pure hydrocarbons. In German. 1.50

137 PB L 17672 — Physical theories of the lubricating process. In German. 1.50

138-141 PB L 17672 — The limits of solids and asphalts formed in the sumpfphase with low hydrogen consumption. In German. 1.50

142-144 PB L 17672 — Analysis of asphalts with the aid of chromatographic absorption analysis. In German. 1.50

145-168 PB L 17672 — The development of airplane engines. In German. 2.50

169-175 PB L 17672 — The colloidal structure of asphalts. In German. 1.50

176-182 PB L 17672 — Methods for the characterization and analysis of asphalts. In German. 1.50

183-192 PB L 17672 — The development of aircraft engines. Second part. The construction of the engine cylinders with special consideration of the fuel problems. In German. 1.50

193-207 PB L 17672 — Super chargers and super charger control on aircraft engines. In German. 1.50

208-239 PB L 17672 — Development of airplane engines with special consideration of the fuel problems. (1st draft). In German. 3.50

240-259 PB L 17672 — Resin formation in gasolines during storage and artificial ageing, and prevention thereof. In German. 2.00

260-264 PB L 17672 — On the question of cracking with moving catalysts. In German. 1.50

265-284 PB L 17672 — Investigations at pressures up to 50,000 atms. In German. 2.00

285-287 PB L 17672 — Limits of ignition and ignitability of hydrocarbons. In German. 1.50

288-295 PB L 17672 — These frames are illegible.

296-298 PB L 17672 — Solubility of H_2 in liquid hydrocarbons. In German. 1.50

299-302 PB L 17672 — Chemical warfare agents. In German. 1.50

303-318 PB L 17672 — Process for the production of knock-resistant hydrocarbons. In German. 2.00
Almost illegible.

319-321 PB L 17672 — Remarks on the article: "The isomerizing action of cyclization catalysts" J. Amer. Chem. Soc. 63. 519 to 520 (1941). In German. 1.50

322-329 PB L 17672 — These frames are illegible.

330-343 PB L 17672 — Gas hydrates. In German. 1.50

344-350 PB L 17672 — Relations between the physical properties of hydrocarbons. In German. 1.50
Partly illegible.

351-354 PB L 17672 — 10 years of electron microscopy. In German. 1.50

355-357 PB L 17672 — Addenda to the isomerization constants of hexanes and pentanes. In German. 1.50

358-394 PB L 17672 — Working data for mineral oil engineers. In German. 7.00

395-415 PB L 17672 — Oxidation of lubricating oils. In German. 2.50

Hochdruckversuche Laboratories. Papers on pre-hydrogenation. Files of Dr. Peters. Folder No. S-33/I-B-9.

416-420 PB L 17672 — Dependence on temperature of the reactions taking place during the hydrogenation of coal liquefaction middle oil over catalysts 6718. In German. 1.50

421-428 PB L 17672 — The dependence on pressure of the reactions taking place during the hydrogenation of coal liquefaction middle oils over catalysts 8376, in the range from 150 to 250 atms-H_2. In German. 1.50

429-448 PB L 17672 — The dependence on temperature of the reactions taking place during the hydrogenation of coal liquefaction middle oils over catalysts 5058, 7846, and 8376. In German. 2.00
Legibility poor.

449-455 PB L 17672 — Results of the prehydrogenation of coal liquefaction over catalysts 5058, 7846, and 7846 W 150 at pressures between 250 and 180 atms. In German. 1.50

456-462 PB L 17672 — Long-term experiment on hydrogenation of coal and lignite liquefaction products over catalysts 8376 + 7846 W 250, without sulfurization of the charge. In German. 1.50

463-464 PB L 17672 — Production of aviation gasoline from Scholven liquefaction middle oil over aromatizing prehydrogenation. In German. 1.50

465 PB L 17672 — The necessity of H_2SO_4 wash for prehydrogenation middle oils. In German. 1.50

466-474 PB L 17672 — Recent experiments in the field of prehydrogenation catalysts, especially of catalyst 8376. In German. 1.50

475-479 PB L 17672 — Discussion about the use of 8376 and 5058 in the gas phase. In German. 1.50
Legibility poor.

480-482 PB L 17672 — These frames are illegible.

483 PB L 17672 — Experiments for a new prehydrogenation contact. (catalyst 9010 = 8376 plus 0.3% Co_2O_3). In German. 1.50
Legibility poor.

484-487 PB L 17672 — Tests of some new prehydrogenation catalysts. In German. 1.50
Legibility poor.

488-494 PB L 17672 — The effect of W, Ni, Co, and Fe as active components on alumina prehydrogenation catalyst. In German. 1.50

495-498 PB L 17672 — Testing of 8376 catalysts for the terra alba factory as well as development of new prehydrogenation catalysts in the 200 cc furnaces. In German. 1.50

499-503 PB L 17672 — The catalyst 7846 W250. In German. 1.50

504-512 PB L 17672 — The effect of W, V, Ni, Co, and Fe as active components on alumina prehydrogenation catalysts. In German. 1.50

513-515 PB L 17672 — Examination of new prehydrogenation catalysts. In German. 1.50

516-525 PB L 17672 — Examination of new prehydrogenation catalysts. In German. 1.50

526-527 PB L 17672 — Influence of the Ni content on alumina tungsten-nickel catalysts. In German. 1.50

528-531 PB L 17672 — Status of prehydrogenation of Oct 20, 1941. In German. 1.50

532-542 PB L 17672 — Testing of new prehydrogenation catalysts in 30 cc lead bath furnaces. In German. 1.50

543-547 PB L 17672 — Prehydrogenation with catalysts 7846 Mo and 7846W. In German. 1.50
Legibility poor.

548-550 PB L 17672 — Alumina molybdenum - nickel and alumina-tungsten nickel prehydrogenation catalysts. In German. 1.50

551-552 PB L 17672 — On the question of the production of diluted prehydrogenation catalysts. In German. 1.50

552a-556 PB L 17672 — Hydrogenation activity of alumina-tungsten-nickel catalysts produced in different ways. In German. 1.50

557-564 PB L 17672 — The influence of temperature on the results of prehydrogenation over catalysts 7846. In German. 1.50

565-577 PB L 17672 — The influence of throughput, oil partial pressure and contact time on the results of prehydrogenation with catalyst 7846. In German. 1.50

578-579 PB L 17672 — Prehydrogenation with alumina-tungsten catalyst 8149 = 7846W. In German. 1.50

580-583 PB L 17672 — Further developments in the field of 7846 catalysts. In German. 1.50

584-587 PB L 17672 — New prehydrogenation catalysts by dilution of 5068 with ZnS. In German. 1.00

588-592 PB L 17672 — Prehydrogenation of lignite liquefaction oil Leuna over a tungsten catalyst diluted with ZnS. In German. 1.00

593-600 PB L 17672 — Additional experiments on catalysts in the field of alumina-Mo-Ni-catalysts. In German. 1.00

601-623 PB L 17672 — Recent experiments in the field of prehydrogenation of coal and lignite liquefaction middle oil with Mo-containing catalysts in a 1-liter furnace. In German. 2.50
Legibility poor.

624-645 PB L 17672 — Development of prehydrogenation catalysts. In German. 2.50

646-656 PB L 17672 — Development of prehydrogenation catalysts. Second part. Alumina-Mo catalysts combined with tungsten containing catalysts. In German. 1.50

657-664 PB L 17672 — Development of prehydrogenation catalysts. 1st part up to 7745. In German. 1.50

665-667 PB L 17672 — Prehydrogenation of coal liquefaction middle oil Scholven over catalyst 7745. In German. 1.50
Graphs illegible.

668-669 PB L 17672 — Discussion of prehydrogenation catalysts on Sep 11, 1940. In German. 1.50

670 PB L 17672 — Preliminary report on substitutes for 5068 in prehydrogenation. In German. 1.50

671-674 PB L 17672 — Status of prehydrogenation experiments on Aug 8, 1940. In German. 1.50

675-676 PB L 17672 — Prehydrogenation of coal liquefaction middle oil in 1 liter gas phase furnaces with 250 atm. H_2. In German. 1.50

677-678 PB L 17672 — Prehydrogenation with catalysts on activated alumina carriers. In German. 1.50

679-695 PB L 17672 — Remarks on prehydrogenation. In German. 2.00

696-697 PB L 17672 — Prehydrogenation experiments with catalysts on alumina carriers. In German. 1.50

698-701 PB L 17672 — Prehydrogenation with 5050 and diluted molybdenum and tungsten catalysts. In German. 1.50

702-705 PB L 17672 — Remarks on prehydrogenation. In German. 1.50

706-708 PB L 17672 — Prehydrogenation over catalysts on activated alumina carriers. In German. 1.50

709-714 PB L 17672 — Improvement of 6719 by various additions. In German. 1.50
Preliminary report.

715-718 PB L 17672 — Prehydrogenation of coal liquefaction middle oils over iron-tungsten catalyst. In German. 1.50

719-725 PB L 17672 — Prehydrogenation catalyst, 6719. In German. 1.50

726-733 PB L 17672 — 6434 "Benzination" of coal liquefaction middle oil which has been prehydrogenated over alumina-molybdenum. In German. 1.50

734-740 PB L 17672 — Catalystic experiments on prehydrogenation. In German. 1.50

741-747 PB L 17672 — Refining of Leuna - liquefaction middle oil with catalyst 7360 at 180 atms. In German. 1.50

748-757 PB L 17672 — Refining of coal middle oil with catalyst 7360 at 50 and 230 atms. In German. 1.50

758-759 PB L 17672 — Refining of coal liquefaction middle oil at 50 atms. over catalyst 3510. In German. 1.50

760-763 PB L 17672 — Catalysts free from Ni for prehydrogenation. In German. 1.50

764-775 PB L 17672 — Prehydrogenation of coal middle oil over K7434 (Al_2O_3+ 10% Mo). In German. 1.50

776-779 PB L 17672 — Prehydrogenation of lignite and coal middle oils with iron-tungsten catalysts and benzination of the resulting B-middle oils over 6434. In German. 1.50
Partly illegible.

Hochdruckversuche Leboratories. Papers on prehydrogenation. Files of Dr. Peters. Folder No. S-33/I-B-10.

780-792 PB L 17672 — Treatment of coal middle oil via prehydrogenation 7846W250. Benzination and D. H. D. In German. 1.50

793-803 PB L 17672 — The influence of the degree of hydrogenation (A.P. of B-middle oil) on the results of the 8376/6434 treatment of B-middle oil Scholven. In German. 1.50

804-807 PB L 17672 — Use of alumina-W-Ni prehydrogenation catalyst 8376 (=7846W250) for various raw materials. In German. 1.50

808-811 PB L 17672 — Attempt to process 7019-B-middle oil Scholven over 8376/6434 to 87 O.N. motor fuel. In German. 1.50

813-826 PB L 17672 — Use of the alumina-W-Ni prehydrogenation catalyst 8376 (7846W250) for various raw materials. In German. 1.50

827-845 PB L 17672 — Catalyst 7846 for the prehydrogenation of Scholven middle oil. In German. 2.00

846-859 PB L 17672 — Experiments for the prehydrogenation of coal liquefaction middle oil with catalyst 7846W250). In German. 1.50

860-869 PB L 17672 — 5058/6434 comparative experiments for Scholven and Gelsenberg. In German. 1.50

870-881 PB L 17672 — Comparison of hydrogenation products of Gelsenberg and Scholven. In German. 1.50

882-905 PB L 17672 — Report on prehydrogenation experiment with middle oils from coal liquefaction over catalyst 7846W250 on a pilot plant scale. In German. 2.50

906-911 PB L 17672 — Benzination of 8376 - R-middle oils, from the large-scale experiment Ka501, performed on a small scale. In German. 1.50

912-936 PB L 17672 — Prehydrogenation experiment with middle oils from coal liquefaction over catalyst 7846W250 on a pilot plant scale. In German. 2.50

937-947 PB L 17672 — Processing of a + s-middle oil (1:2) from Auguste-Viktoria P 1094 to automobile and aviation gasoline. In German. 1.50

948-950 PB L 17672 — Experiments on the sulfurization of Pölitz charge P 1499 conducted on Apr 13, 1943. In German. 1.50

951-959 PB L 17672 — Use of alumina W-Ni prehydrogenation catalyst 8376(=7846 W250) for miscellaneous charges. In German. 1.50

960-962 PB L 17672 — Joint treatment of petroleum total distillates with coal tar oil. In German. 1.50

963-969 PB L 17672 — Treatment of tar middle oil P 1429 Lützkendorf over 5058/6434 for Pölitz. In German. 1.50

970-973 PB L 17672 — Treatment of tar middle oil at Pölitz. In German. 1.50

974-978 PB L 17672 — Prehydrogenation and "Benzination" of sumpf products form Jannina coal K 1265. In German. 1.50

979-984 PB L 17672 — "Benzination" of middle oil (from K1242) prehydrogenated in stall 501 over catalyst 8376. In German. 1.50

985-998 PB L 17672 — Processing of sumpf gasoline and middle oil from Silesian coal K 1197 to aviation and automobile gasoline over 5058 + 7846 and 6434. In German. 1.50

999-1009 PB L 17672 — Processing of Silesian coal "Castellenge-Abwehr" to automobile and aviation gasoline over 6719/6434. In German. 1.50

1010-1017 PB L 17672 — Processing of sumpf middle oil from Silesian coal "Grafin Johanna-Schacht" to automobile and aviation gasoline over 5058/6434. In German. 1.50

1018-1022 PB L 17672 — Processing of liquefaction middle oil from Welsan coal to automobile and aviation gasoline. In German. 1.50

1023 PB L 17672 — Processing of coal tar to aviation gasoline. In German. 1.50

1024-1033 PB L 17672 — Use of alumina W-Ni prehydrogenation catalyst 8376(=7846 W 250) for various charges. In German. 1.50

1034-1045 PB L 17672 — Use of alumina W-Ni-prehydrogenation catalysts 8376(= 7846 W 250) for various charges. In German. 1.50

1046-1049 PB L 17672 — Processing of coal tar and heat pressure product s-M oil over 5058. In German. 1.50

1050-1053 PB L 17672 — Treatment of coal tar s-middle oil P 1443 redistilled up to 380°C. in mixture with heat pressure product. In German. 1.50
Preliminary report.

PB L 17665. I. G. FARBENINDUSTRIE A. G. Papers on various experiments and processes. Hochdruckversuche Laboratories and Hydrierwerk Scholven. (FIAT Microfilm Reel LF 68 (TOM 166), Frames 1-866) Jan 1946. 867 f.
Price: Microfilm-$6.00 - Enlargement print-$87.00
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Frames	Title	Price
1-118 PB L 17665	Drawings for experimental hydrogenation equipment. Folder No. 528/III A-5. In German. Legibility is poor.	$12.00
	Hochdruckversuche Laboratories. Experimental Coal Hydrogenation in 10-ltr. Furnaces. Folder No. 528/III-A-7.	
119-186 PB L 17665	Extractive hydrogenation of coal. In German.	7.00
187-214 PB L 17665	Combined processing of Silesian coal (K 1197) and high temperature carbonization tar from Silesian coal (P 1376) to a small excess in heavy oil at 600 atm. in the 10-ltr. furnace. In German.	3.00
215-250 PB L 17665	Processing of high temperature carbonization tar "Carsten-Zentrum" of the "Schlesag" at 600 atm. to an excess in heavy oil. In German.	4.00
251-283 PB L 17665	Processing of a mixture of coal tars (for Pölitz) at 600 atm. to an excess in heavy oil in the 10-ltr. furnace. In German.	3.50
284-317 PB L 17665	Processing of a mixture of carbonization tars (Ruhr) at 600 atm. to an excess in heavy oil in the 10-ltr. furnace. In German.	3.50
318-348 PB L 17665	Processing of carbonization tar "Auguste Viktoria" (Ruhr) at 600 atm. to an excess in heavy oil in the 10-ltr. furnace. In German.	3.50
	Hochdruckversuche Laboratories: Miscellaneous Papers on Aromatization. Folder No. 529/III-E-11.	
349-353 PB L 17665	The influence of the partial pressure of the product on the aromatization of coal liquefaction middle oil Scholven over alumina-Terrana catalyst 8688. In German.	1.50
354-362	Influence of catalyst, pressure and	

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PB L 17665 partial pressure of the product in the cracking and hydrogenation of Bruchsal gas oil. In German. 1.50

363-374 PB L 17665 Aromatization at 250 atm. with alumina-Terrana catalyst of the type 8685. In German. 1.50

375-382 PB L 17665 Influence of the re-cycle ratio on the 250 atm. aromatization of coal liquefaction middle oil over alumina-Terrana catalyst 8685. In German. 1.50

383-389 PB L 17665 Influence of the through-put on the 250 atm. aromatization of coal liquefaction middle oil over alumina-Terrana catalyst. In German. 1.50

390-397 PB L 17665 The influence of pressure on the aromatization of coal liquefaction middle oil with Terrana catalyst. In German. 1.50

398-405 PB L 17665 Aromatization at 250 atm. with alumina-Terrana catalyst 8685. In German. 1.50

406-408 PB L 17665 Catalyst 8685 for aromatization at 250 atm. In German. 1.50

409-411 PB L 17665 Experiments concerning aromatization at atmospheric pressure of pure n-heptane and paraffin-containing heavy gasoline. In German. 1.50

412-427 PB L 17665 Experiments concerning catalytic aromatization at 250 and 600 atm. in 1-ltr. furnaces with alumina, bleaching earth and synthetic silicate catalysts. In German. 2.00

428-441 PB L 17665 Testing of aromatization catalyst at 250 atm. in 100-cc-lead bath furnaces. In German. 1.50

442-452 PB L 17665 Amount of gasification and composition of gases in the aromatization of coal liquefaction middle oil, as dependent on the catalyst used and the experimental conditions. In German. 1.50

453-462 PB L 17665 Reasons for differences in quality between rest gasolines from the aromatization of coal liquefaction. In German. 1.50

463-468 PB L 17665 Aromatization experiment over catalyst 7019 with subsequent alumina catalyst. In German. 1.50

469-492 PB L 17665 Aromatization at 250 atm. over alumina catalyst. In German. 2.50

493-517 PB L 17665 Dehydrogenation experiments for testing aromatization catalysts. Second continuation. In German. 2.50
Legibility is poor.

518-539 PB L 17665 Dehydrogenation experiments for testing aromatization catalysts. First continuation. In German. 2.50

540-549 PB L 17665 Aromatization experiments. In German. 1.50

550-554 PB L 17665 7019 catalysts. Preparation of the carrier. In German. 1.50

Hochdruckversuche Laboratories: Work on Lubricating Oils. Folder No. 328/III-A-11.

555-567 PB L 17665 Experiments for the improvement of lubricants with catalyst 8376 in the 1-ltr. furnace. 2. Experiments with preliminary refining products from Lützkendorf heavy oil. Comparison with catalyst K 7846. In German. 1.50

568-573 PB L 17665 Hydrogenation of used aviation motor oil (P 1580). In German. 1.50
Legibility is poor.

574-586 PB L 17665 Experiments aiming at the improvement of lubricants with catalyst 8376 in the 1-ltr. furnace. Comparison with catalyst 5058. In German. 1.50

587-607 PB L 17665 Tests on models concerning dilution of lubricants. In German. 2.50

608-616 PB L 17665 Refining of TTH paraffin of the Brabag-Leitz Works at 300 atm. over catalyst 8376 in chamber 501/502. In German. 1.50

617-620 PB L 17665 Cracking of paraffins with high molecular weight which have been obtained by Fischer's synthesis. Catalysts used for the cracking process: 5058 and 8376. Pressure: 250 atm. In German. 1.50
Legibility is poor.

621-640 PB L 17665 Hydrogenation processing of specially hard waxes (obtained by the Fischer synthesis) over catalysts 8376 at 250 atm. In German. 2.00
Legibility is poor.

Hochdruckversuche Laboratories. Reports on $CO-H_2$ Synthesis. Folder No. 329/IX.C-7.

641-645 PB L 17665 Cost estimate of Michael-synthesis of olefins in the emulsion phase. In German. 1.50

646-651 PB L 17665 Conference regarding Oxo on September 15, 1941. In German. 1.50

652-657 PB L 17665 The synthesis of olefins over Co-catalyst. In German. 1.50

Hydrierwerk Scholven. Papers Concerned with Desulfurization by F-coal. Folder No. 329/IX-A-8.

658-665 PB L 17665 Sulfur-purification with F-coal. In German. 1.50

666-674 PB L 17665 Report on the Ludwigshafen desulfurization plant using F-coal. In German. 1.50

Hochdruckversuche Laboratories: Reports on Michael Hydrocarbon Synthesis. Folder No. 329/IX.C-6.

675-685 PB L 17665 Comparative analysis of the products of the gas and emulsion phase synthesis at different temperatures. In German. 1.50

686-694 PB L 17665 On the deposition of the finely divided catalyst on the wall of the furnace in the emulsion process (hydrocarbon synthesis). In German. 1.50

695-700 PB L 17665 Syntheses in the liquid phase. In German. 1.50

701-704 PB L 17665 Processing Michael product to alcohol. In German. 1.50

Hochdruckversuche Laboratories: Reports on Hydrocarbon Synthesis. Folder No. 329/IX.C-8.

705-708 PB L 17665 Synthesis of alcohol from $CO-H_2$ mixtures by means of the emulsion process. In German. 1.50

709-712 PB L 17665 Synthesis of alcohol from $CO-H_2$ mixtures by means of the gas re-cycle process. In German. 1.50

713-726 PB L 17665 — Synthesis - plant Ludwigshafen. In German. 1.50

727-738 PB L 17665 — 75,600 $Nm^3$00 plus H_2 100% gm. per hour according to Winkler from Upper Silesian coal or Leuna brown coal and low temperature carbonization coke in the Demag generator. In German. 1.50

739-754 PB L 17665 — Synthesis of paraffin Dr. Michael. In German. 2.00

755-759 PB L 17665 — Summary of the plant estimate for the production of 100,000 t per year, using middle oil by the "Synthesis Process" (Dr. Michael). In German. 1.50

760-761 PB L 17665 — Requirement of personnel for a plant producing 100,000 t per year, operating with middle oil, according to the "Synthesis Process" (Dr. Michael). In German. 1.50

762-768 PB L 17665 — Cost estimate for a plant producing 100,000 Nm^3/hr of ideal synthesis gas (CO plus H_2) according to the Duftschmid process. In German. 1.50

769-778 PB L 17665 — Comparison of the Fischer process with that of Dr. Michael. In German. 1.50

779-787 PB L 17665 — Concerns: Estimates for the I. G. Oppau plant. Equipment for oil synthesis. In German. 1.50

788-791 PB L 17665 — Processing synthetic products to detergents. In German. 1.50

792-794 PB L 17665 — Synthesis experiments at 200°. In German. 1.50

795-797 PB L 17665 — Products obtained by the emulsion process. In German. 1.50

798-800 PB L 17665 — Emulsion process of the hydrocarbon synthesis. In German. 1.50

801-804 PB L 17665 — Disturbances occurring in the hydrocarbon synthesis and their prevention. In German. 1.50

805-807 PB L 17665 — Alkaline washing of the furnace sediment from the hydrocarbon synthesis with the purpose of increasing the yield in middle oil. In German. 1.50

808-813 PB L 17665 — Deposition of catalyst on the furnace wall in the emulsion process. In German. 1.50

814-815 PB L 17665 — Working up the products of the synthesis into alcohols, fatty acids and sulfonates. In German. 1.50

816-817 PB L 17665 — Refining of Michael middle oil and gasoline by extraction with 70% sulfuric acid. In German. 1.50

818-824 PB L 17665 — The present status of the hydrocarbon synthesis by the emulsion process. In German. 1.50

825-836 PB L 17665 — Comparative analysis of the products from the gas and emulsion phase synthesis at different temperatures. In German. 1.50

837-851 PB L 17665 — Carbon monoxide-hydrogen syntheses. In German. 1.50

851-861 PB L 17665 — The present status of the hydrocarbon synthesis from mixtures of carbon monoxide and hydrogen. In German. 1.50

862-868 PB L 17665 — Gasoline synthesis from carbon monoxide and hydrogen according to the gas recycle process by means of iron catalyst. In German. 1.50

PB L 17685. I.G. FARBENINDUSTRIE A.G., HOCHDRUCKVERSUCHE LABORATORIES. Reports of research on various oil processes. (FIAT Microfilm Reel LF 103 (TOM 170), Frames 1-748) Jan 1946. 747 f. Price: Microfilm-$6.00 - Enlargement Print-$75.00

The individual items of this FIAT microfilm reel are listed below. They will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please give the above PB number and the frame numbers when ordering individual items from this microfilm reel. In German. The larger part of this reel is illegible.

Frames	Title	Price
Hochdruckversuche Laboratories. Papers on hydrogenation of various raw material. Files of Dr. Peters. Folder No. 333/I/C-12.		
1-8 PB L 17685	These frames are illegible.	
9-10 PB L 17685	Electrode coke. In German.	$1.50
11-14 PB L 17685	Processing of the hydrogenation residue into a briquetting agent. In German. Legibility poor.	1.50
15-33 PB L 17685	These frames are illegible.	
34-37 PB L 17685	Analysis of Rumanian crude oil from Ploitz. In German. Legibility poor.	1.50
38-45 PB L 17685	These frames are illegible.	
46-47 PB L 17685	Hungarian petroleum. In German. Legibility poor.	1.50
48-79 PB L 17685	These frames are illegible.	
80-88 PB L 17685	Ash obtained as byproduct of hydrogenation. In German. Legibility poor.	1.50
89-93 PB L 17685	On the influence of speed of flow and the use of additional gas in pressure distillation. In German. Legibility poor.	1.50
94-95 PB L 17685	Pressure distillation of different raw materials. In German. Legibility poor.	1.50
96-103 PB L 17685	The process of pressure distillation. In German.	1.50
104-110 PB L 17685	On the chemical reaction and the action of catalysts in pressure distillation. In German. Legibility poor.	1.50
111-123 PB L 17685	These frames are illegible.	
124-132 PB L 17685	On the behavior of the different components of coal under extraction, hydrogenation, coking, low temperature carbonization and oxidation. In German.	1.50
133-142 PB L 17685	Pilot plant experiments regarding propane paraffination. In German. Two frames illegible.	1.50
143 PB L 17685	Parallels to experiments with rotary filter. In German.	1.50

Fuels and Lubricants (contd)

144-155 PB L 17685 — Lessons to be learned and conclusions to be drawn from experiments for large-scale installations. In German. 1.50

156-161 PB L 17685 — Hydrogenation experiments with coal of different petrographic composition in rotary autoclaves. In German. Poor legibility. 1.50

Hochdruckversuche Laboratories. Papers on polymerization, alkylation, etc. Files of Dr. Peters. Folder No. 333/I-C-3.

162-176 PB L 17685 — Present status of experiments in polymerization. In German. 1.50
Legibility poor.

177-204 PB L 17685 — Catalytic polymerization of gaseous olefins to motor fuel. In German. 3.00
Legibility poor.

205-226 PB L 17685 — Catalytic polymerization for the production of motor fuels. In German.
Legibility poor. 2.50

Hochdruckversuche Laboratories. Papers on hydrocarbon synthesis. Files of Dr. Peters. Folder No. 333/I-C-4.
Legibility poor.

227-240 PB L 17685 — Carbonmonoxide-hydrogen syntheses. In German. 1.50

241-262 PB L 17685 — These frames are illegible.

263-271 PB L 17685 — Note on a discussion held in Düsseldorf on Nov 21, 1938. In German. 1.50
Legibility poor.

272-370 PB L 17685 — These frames are illegible.

371 PB L 17685 — Standard quality for "Co-metal." In German. 1.50

372-402 PB L 17685 — The present status of the synthesis of hydrocarbons according to Kuhrchemie (Fischer-Tropsch). In German. 3.50

403-409 PB L 17685 — Experiments in the production of aromatic gasolines from synthesis products. In German. 1.50
Legibility poor.

410-414 PB L 17685 — Catalytic cracking of products of the CO-H_2 synthesis over Si-Al catalysts. In German. 1.50

415-419 PB L 17685 — Treatment of Kogasin. In German. 1.50

420-430 PB L 17685 — Hydrocarbon synthesis from water gas with sintered iron cavalysts by the circulation process at medium pressures. In German. 1.50

Hochdruckversuche Laboratories. Papers on lube oils and on cracking. Files of Dr. Pier. Folder No. 531/II-A-6.

431-433 PB L 17685 — Dilution of lubricants. In German. 1.50

434-443 PB L 17685 — The oil content of the crude paraffin fraction from neutral oils. In German. 1.50

444-452 PB L 17685 — Combination of catalytic cracking with hydrogenating splitting in the working of middle and heavy oil from crude oil. In German. 1.50
Legibility poor.

453-464 PB L 17685 — Working of middle oils over dehydrogenation catalysts. Second processing of Bruchsal middle oil over catalyst K 8147. In German. 1.50

465-480 PB L 17685 — Cracking of gasolines and gas oil under hydrogen pressure. In German. 2.00

Hochdruckversuche Laboratories. Papers on various hydrogenation works. Files of Dr. Peters. Folder No. 531/I-D-2.

480A-501 PB L 17685 — Exchange of experience (small-scale versus commercial installations). In German. Partly illegible. 2.50

502-547 PB L 17685 — These frame numbers are illegible.

Hochdruckversuche Laboratories. Miscellaneous papers on lesser subjects connected with motor fuels. Files of Dr. Peters. Folder No. 533/I-C-7.

548-568 PB L 17685 — An investigation of gas oils and refining products of the latter, particularly with use of the "ring analysis" of Waterman and the "ring value" method of Gross and Grodde. In German. Two charts illegible. 2.50

569-577 PB L 17685 — Exchange of experiences regarding analytic methods up till Jun 10, 1941. In German. Partly illegible. 1.50

578-637 PB L 17685 — Standard tests for airplane fuels. In German. 6.00

638-697 PB L 17685 — Analytic and preparative separation of hydrocarbon mixtures by fractionation. In German. 6.00

698-712 PB L 17685 — These frame numbers are illegible.

Hochdruckversuche Laboratories. Papers on various upgrading processes (aromatization, DHD, benzination, etc.) in the gas phase. Files of Drs. Anthes, V. Füner and Scheiner. Folder No. 533/IV-C-10.

713-720 PB L 17685 — Splitting catalysts without tungsten content of the type of SiO_2-Al_2O_3-Fe_2O_3-hydrate mixtures treated with HF. In German. 1.50

721-734b PB L 17685 — Aromatization of gasoline plus middle oil from Leuna brown coal liquefaction oil, over catalyst 8754 (= 8688). In German. 1.50

735-738 PB L 17685 — The numerical expression of the splitting activity of benzination catalysts or of the capability of oils of being benzinated. In German. 1.50

739-748 PB L 17685 — These frames are illegible.

PB L 70218. RUHRCHEMIE A.G. OBERHAUSEN, GERMANY. Oils, gasoline and catalysts. (FIAT Microfilm Reel K-29, Frames 6529-7370). 1938 - 1945. 851 f. Price: Microfilm -$6.00 - Enlargement Print-$85.50. This reel was prepared by FIAT investigators in Germany. 95 individual items are listed below and will be available as enlargement prints. The entire reel may be purchased as a microfilm for $6.00. Please include PB and frame numbers when ordering individual items. In German.

Frames.	Title	Price
6529 - 6532 PB L 70218	After-treatment of synthetic oil and transformation of the residues to granular form. By Clar. Jul 21, 1939. In German.	1.50
6533 - 6541 PB L 70218	Tests on the preparation of oil with maximum viscosity from unrefined	

cracked-gasoline. By Tramm and Clar 1938. In German. 1.50

6542 - 6563 PB L 70218 Processing of used catalyst oil. By Tramm and Clar. 1938. In German. 2.50

6564 - 6568 PB L 70218 Influence of catalyst oil on the production of lubricating oil with a maximum viscosity. By Clar. 1938. In German. 1.50

6569-6572 PB L 70218 After-treatment of synthetic oil by contact- oil and a small quantity of aluminum chlorides. By Tram and Clar. 1938. In German. 1.50

6573 - 6579 PB L 70218 Preparation of shock-absorber fluid from cracked gasoline. By Clar. 1938. In German. 1.50

6580 - 6602 PB L 70218 Distillation of lubricating oils in high vacuum. 1943. In German. 2.50

6603 - 6615 PB L 70218 Comparison of the catalytic cracking of gas-oil from the Fischer-Tropsch synthesis and from petroleum. By Holling. 1943. In German. 1.50

6616 - 6629 PB L 70218 Artificial aging of oils by compressed air. By Tramm and Clar. 1943. In German. 1.50

6630 - 6633 PB L 70218 Density of synthetic oil depending on the nature of the primary gasoline and the viscosity of the oil. By Clar. 1942. In German. 1.50

6634 - 6701 PB L 70218 Preparation of oils from primary products of the gasoline pressure synthesis. By Tramm and Clar. 1940-1941. In German. 1.50

6702-6713 PB L 70218 Stabilization of fuels by inhibitors. By Clar. 1941. In German. 1.50

6714 - 6725 PB L 70218 Refining of circulated gasoline before the oil synthesis by cold zinc chloride solution. By Clar. 1945. In German. 1.50

6726 - 6732 PB L 70218 Transformation of cracked gasoline in serial syntheses to residue oils containing 50% "50 Bright-stock". By Clar. 1945. In German. 1.50

6733 - 6744 PB L 70218 Experiences with the artificial aging of synthetic oils. By Clar. 1944. In German. 1.50

6745 - 6765 PB L 70218 Influence of cracked gasoline on the preparation of lubricating oil. By Gottschalk. 1944. In German. 1.50

6766 - 6777 PB L 70218 Preparation of highly viscous residue oils from prepurified cracked gasoline. By Clar. 1943. In German. 1.50

6778 - 6794 PB L 70218 Model experiment for the preparation of oil with the addition of mixtures of cracked and circulated gasoline. By Clar. 1943. In German. 2.00

6795 - 6805 PB L 70218 Stabilization of synthetic oils by addition of inhibitors before the synthesis. By Clar. 1943. In German. 1.50

6806 - 6818 PB L 70218 Preparation of residue oils with a maximum viscosity from prepurified cracked gasoline by separate synthesis. By Clar. 1943. In German. 1.50

6819 - 6822 PB L 70218 Use of "TVP" gasoline in the lubricating oil installation. 1938. In German. 1.50

6823 - 6857 PB L 70218 Catalytic dehydrogenation of propane. By Tramm and Speitmann. 1939. In German. 3.50

6858 - 6861 PB L 70218 Tests on the refining of "Ruhrgasol" by active carbon. By Schubert. 1938. In German. 1.50

6862 - 6865 PB L 70218 Olefin content of "Gasol" and gasoline from magnesium-thorium catalysts. 1938. In German. 1.50

6866 - 6870 PB L 70218 Determinations of "Gasol" in cracked gas and in unstabilized cracked gasoline. 1938. In German. 1.50

6871 - 6878 PB L 70218 Plant analyses of the plant laboratory of the Ruhrchemie A.G. By Tramm and others. 1938. In German. 1.50

6879 - 6911 PB L 70218 Preparation of alcohols of the C_3 and C_4 - fraction of "Gasol" and of isopropyl ether of isopropyl alcohol. By Spiske. 1938. In German. 3.50

6912 - 6925 PB L 70218 Iron catalysts in the gasoline synthesis. By Roelen. 1939. In German. 1.50

6926 - 6929 PB L 70218 Preparation of ironoxide for iron catalysts. By Blase. 1939. In German. 1.50

6930 - 6931 PB L 70218 Determination of iron in catalysts. By Roelen. 1939. In German. 1.50

6932 - 6935 PB L 70218 Iron contact-catalysts. By Alberts. 1938. In German. 1.50

6936 - 6940 PB L 70218 New method of cooling contact furnaces for the synthesis of hydrocarbons. By Roelen. 1939. In German. 1.50

6941 - 6944 PB L 70218 Paraffin synthesis with a new cobalt-catalyst. By Roelen. 1939. In German. 1.50

6945 - 6948 PB L 70218 Influence of the Fe-content of kieselguhr on the properties of catalysts for the hydrocarbon syntheses. By Dahm. 1939. In German. 1.50

6949 - 6951 PB L 70218 Preparation of phosphoric acid catalyst. By Tramm. 1939. In German. 1.50

6952 - 6957 PB L 70218 Dilute catalysts in the aromatization of hydrocarbons. By Roettig. 1939. In German. 1.50

6958 PB L 70218 Catalysts for an increased production of paraffin. By Buechner (?) 1939. In German. 1.50

6959 - 6967 PB L 70218 Development of catalysts for the Fischer-Tropsch-synthesis. By Roelen. 1939. In German. 1.50

6968 - 6972 PB L 70218 Preparation of catalysts with a high cobalt density. 1939. In German. 1.50

6973 - 6980 PB L 70218 Tests on catalysts with Al_2O_3 as carrier substance.

By Tramm and Rottig. 1939. In German. 1.50

6981 - 6986 PB L 70218 — The causes of cobalt losses in synthesis installations. 1939. In German. 1.50

6987 - 6988 PB L 70218 — The sulfur content in solutions for the preparation of cobalt catalysts. By Roelen. 1939. In German. 1.50

6989 - 6990 PB L 70218 — Influence on the grain solidity of cobalt-catalysts. By Heckel. 1939. In German. 1.50

6991 - 6994 PB L 70218 — Tests on the precipitation of cobalt catalysts, n.d. In German. 1.50

6995 - 7004 PB L 70218 — Regeneration of thorium from thorium catalyst sludge. By Buechner. 1938. In German. 1.50

7005 - 7028 PB L 70218 — The Harnes catalyst plant and synthesis installation. By Gehrke and Schuff. 1938. In German. 2.50

7029 PB L 70218 — Examination of kieselguhr. By Heckel. 1938. In German. 1.50

7030 - 7031 PB L 70218 — Life of catalysts. By Roelen. 1938. In German. 1.50

7032 - 7036 PB L 70218 — Recovery of thorium from the thorium catalyst sludge. By Buechner. 1938. In German. 1.50

7037 - 7039 PB L 70218 — The thorium content of mixed catalysts. By Heckel. 1938. In German. 1.50

7040 - 7047 PB L 70218 — Influence of the reduction and the kieselguhr type on the catalytic efficiency of contacts. By Heckel. 1938. In German. 1.50

7048 - 7056 PB L 70218 — Japanese kieselguhrs as carrier substances for catalysts. By Heckel. 1938. In German. 1.50

7057 - 7076 PB L 70218 — Aromatization catalysts. By Rottig. 1938. In German. 2.00

7077 - 7081 PB L 70218 — Tests on a new catalyst carrier "Eirichkorn". By Heckel. 1938. In German. 1.50

7082 - 7086 PB L 70218 — Determination of grit in kieselguhrs. By Roelen. 1938. In German. 1.50

7087 - 7090 PB L 70218 — Alkali resistance of kieselguhrs. By Roelen. 1938. In German. 1.50

7091 - 7094 PB L 70218 — Large scale tests on recovery of thorium in the preparation of catalysts. By Buechner. 1938. In German. 1.50

7095 - 7108 PB L 70218 — Oxidizability of cobalt catalysts. By Buechner. 1938. In German. 1.50

7109 - 7115 PB L 70218 — Experiences with thorium and magnesium catalysts in the plants of the Ruhrchemie A.G. By Schuff. 1938. In German. 1.50

7116 - 7117 PB L 70218 — Tests on methanizing of carbonic acid. By Roelen. 1938. In German. 1.50

7118 - 7123 PB L 70218 — Determination of the content of free metals of catalysts. By Roelen. 1938. In German. 1.50

7124 - 7128 PB L 70218 — Regeneration of cobalt-solutions from catalyst manufacture. By Schenk. 1938. In German. 1.50

7129 - 7133 PB L 70218 — Recovery of thorium from the thorium-catalyst sludge. By Buechner. 1938. In German. 1.50

7134 - 7135 PB L 70218 — Reducibility of cobalt catalysts. By Schenke. 1938. In German. 1.50

7136 - 7138 PB L 70218 — Influence of reduction conditions on the activity of Th- and Th-Mg-contacts. By Schuff. 1938. In German. 1.50

7139 - 7163 PB L 70218 — The most favorable cobalt-kieselguhr proportion in cobalt catalysts. By Roelen and Heckel. 1938. In German. 2.50

7164 - 7165 P B L 70218 — Influence of the reduction and the granular form on the cobalt density in cobalt catalysts. By Schenk. 1938. In German. 1.50

7166 - 7171 PB L 70218 — Thermal conductivity of contact material for catalysts. By Roelen. 1935. In German. 1.50

7172 - 7183 PB L 70218 — Influence of an increased rate of flow on the olefin content of synthetic gasoline. By Landgraf. 1938. In German. 1.50

7184 PB L 70218 — CO_2-content of thorium and magnesium-contacts. By Schenk. 1938. In German. 1.50

7185 - 7188 PB L 70218 — Preparation of cobalt catalysts by compression. By Heckel. 1938. In German. 1.50

7189 - 7193 PB L 70218 — Preparation of catalysts. By Roelen. 1938. In German. 1.50

7194 - 7200 PB L 70218 — Comparative examinations of catalysts. By Roelen. 1944. In German. 1.50

7201 - 7209 PB L 70218 — The calculation of the yield in the synthesis of higher hydrocarbons. By Roelen. 1944. In German. 1.50

7210 - 7213 PB L 70218 — Iron-catalysts. By Roelen. 1944. In German. 1.50

7214 - 7215 PB L 70218 — Alcohol-forming iron contacts. By Buechner. 1945. In German. 1.50

7216 - 7219 PB L 70218 — Preparation of aromatization contacts. By Rottig. 1944. In German. 1.50

7220 PB L 70218 — This frame is missing.

7221 - 7225 PB L 70218 — Preparation of various polymerization catalysts. By Spiske. 1943. In German. 1.50

7226 - 7239 PB L 70218 — Catalysts for the hydrogenation of carbon monoxide. By Roelen. 1943. In German. 1.50

7240 - 7241 7250 - 7276 PB L 70218 — Synthesis of hydrocarbons with iron-catalysts. By Roelen and Pflegling (?). 1940. In German. 3.00

7242 - 7249 PB L 70218 — Examination of the reaction water from the iron contact synthesis. By Buechner. 1941. In German. 1.50

7250 - 7276 PB L 70218 — These frames are found with Frames 7240 - 7241.

7277 - 7284 PB L 70218 — Preparation of highly active polymerization catalysts. 1943. In German. 1.50

7285 - 7293 PB L 70218 — Technical preparation of polymerization catalysts.

By Tramm and Spiske. 1942.
In German. 1.50

7294 - 7295 PB L 70218 Apparatus for testing the solidity of contact substances.
By Schrieber. 1941. In German. 1.50

7296 - 7301 PB L 70218 Concentrated cobalt catalysts.
By Roelen. 1941. In German. 1.50

7302 - 7307 PB L 70218 Nickel-containing cobalt catalysts.
By Roelen and Schenk. n.d.
In German. 1.50

7308 - 7315 PB L 70218 Preparation of catalysts for hydrocarbon cracking.
By Stumpfarrer (?). 1941.
In German. 1.50

7316 - 7319 PB L 70218 Use of Ni- and Co-Ni-contacts in gasoline synthesis.
By Heckel. 1941. In German. 1.50

7320 - 7345 PB L 70218 Aluminum oxide in the manufacture of catalysts. By Peters.
1940. In German. 3.00

7346 - 7354 PB L 70218 Damage caused to aromatization catalysts by steam. By Holling.
1940. In German. 1.50

7355- 7363 PB L 70218 Testing of catalysts under pressure. 1940. In German. 1.50

7364 - 7365 PB L 70218 Cracking of petroleum.
By Knöllinger. 1945. In German. 1.50

7366 - 7370 PB L 70218 Catalytic cracking.
By Tramm. 1939. In German. 1.50

PB L 70218-S. RUHRCHEMIE A.G. OBERHAUSEN, GERMANY. Oils, gasoline and catalysts. (FIAT Microfilm Reel K-29, Frames 6529-7370, abstract cards.). 1938-1945. 95 p. Price: Microfilm-$2.00 - Photostat-$7.00.
Brief abstracts of the individual items on the above reel K29, PB 70218 prepared by FIAT personnel in Germany.

MACHINERY (EXCEPT ELECTRICAL)

PB L 37220-T. ECKHERT, E. and WEISE, W. (ed.) Temperature of non-cooled turbine blades in a high-speed gas flow. (COMAN Rept 58; German Aeronautical Res Rept 1387). May 1941. 26 p. Price: Microfilm-$1.00 - Photostat-$2.00
For abstract of original German article. See this Bibliography, vol. 3, p. 718.

PB L 82013. ELECTROACOUSTIC K. G., KIEL, GERMANY. Components and attachments of special milling machines. (FIAT Microfilm Reel K 98, Frames 734-1484) 1941-1943. 751 f. Price: Microfilm-$7.00 - Enlargement print-$77.00
This FIAT microfilm reel consists of drawings and parts lists for components and attachments for special milling machines, such as saddle drives and carriage suspensions, toggle shafts, clamping devices, gears, etc. In German.

PB L 85180. LORIMER, R. S. and NEIL, W. M. Japanese navy Diesel engines. (Naval Tech Mission to Japan Rept S-42) Dec 1945. 57 p. Price: Mimeo-$1.50
The diesel engine industry of Japan did not play as important a part in the war effort as did the American diesel engine industry. Two major reasons were: 1. The lack of ability to design suitable engines of high horsepower output a. The crux of the design problem in Japan at the outbreak of the war was not so much the scarcity of trained engineers and designers, but rather the lack of originality which these designers displayed. Most of the engines adopted by the Japanese for standard use during the war had been designed eight to ten years previously and were approximate copies of European engines. Little change was made to adapt them to the tempo of modern warfare operations. b. With Japan almost entirely cut off from the western world, this traditional lack of originality in basic technical design proved too great an obstacle for Japanese engineers to surmount. As a result, no high speed, high output engines comparable to American models became operational, and only one experimental engine of the type ever approached successful completion. This was the ZC 707, designed by MITSUBISHI, which was completed and tested under NavTechJap supervision. 2. Factors limiting production: a. Complicated design. b. Inadequate knowledge of "tooling up to do the job." c. Inability to make the maximum use of available labor. d. Lack of coordination between the Army and Navy in respect to engine design, development and production. Investigation of the closed cycle diesel engine revealed that the Japanese have been unsuccessful in experimenting on or in adapting this principle to diesel operation.

PB L 86361. MURPHY, G. Diesel engine research and development in Germany during the war and pre-war period. (Naval Tech Mission in Europe. Tech Rept 114-45) Jun 1945. 11 p. Price: Microfilm-$1.25 - Photostat-$2.00
Diesel engine development in Germany has been of a restricted nature. The projects to be undertaken were rigidly controlled by the state through the exercise of materials, manpower, and fuel oil allotments. The development projects were concerned with the design of a new engine or improvement of an existing engine for a specific military or naval application. The main development effort has concerned itself with the improvement and weight reduction of conventional four-cycle engines, especially the six-cylinder 40/46 M.A.N. submarine engine. This includes the engine changes necessary for "SCHNORCHEL" operation. M.A.N. has constructed a twenty-four cylinder Vee-type, double-acting, two-cycle engine in two (2) bore and stroke sizes for surface ship propulsion. The smaller size was to be rated at 9,960 BHP at 600 RPM, while the larger size was to be rated at 14,400 BHP at 450 RPM. None of these engines were actually installed aboard ship. Mercedes-Benz has brought out a 20-cylinder, Vee-type, four-cycle engine, having extremely light weight and low cubic co-efficient for use in "SCHNELL" boats. The engine is essentially a diesel, marine application of an earlier engine used to power the German rigid lighter-than-air ships. The Junkers Jumo 205 (opposed piston, aircraft diesel engine) has been used only experimentally. The engine failed to live up to earlier expectations, and consequently was not built or used in production quantities.

PB L 17686. SCHMIDT, FRITZ A. F. Internal combustion engines. Thermodynamic and experimental principles with special consideration of airplane engines. (FIAT Microfilm Reel LF 104 (TOM 171), Frames not numbered) 1945-1946. 218 f. Price: Microfilm-$3.00 - Enlargement print-$22.00
This is a reproduction of the second edition - 1945 - of the book (which was originally published in 1938) with typewritten additions of 1946. The general problems of Otto and Diesel engines, and the special problems of aircraft engines are dealt with in detail, with numerous graphs and tables. A four-page synopsis in English, prepared by the FIAT investigator, is to be found in the beginning of the reel. In German.

PB L 85183. STEWART, A. J. Hydraulic pumps in Japanese naval ordnance. (Naval Tech Mission to Japan Rept O-53(N)) Feb 1946. 13 p. Price: Mimeo-50¢
Hydraulic pump motors used in Japanese ordnance are all of conventional and well known design. They are known to the Japanese mostly as "Johnny" engines - a probable corruption of the name "Williams-Janney" engines. They have no high speed (over 1000 RPM) small or large pumps

Machinery (contd)

except the 3600 hp turbo direct drive, impeller type pumps used for the 18" turrets of YAMATO and MUSASHI. These pumps were designed and the prototype pump for YAMATO was built in Switzerland by Brown Boveri. Their normal speed is 3700 RPM. All data given in this report are liable to be revised after translation of the numerous documents sent to the Washington Document Center, since a vast amount of research has been done by the Japanese in recent years, both on hydraulic engines and the fluids used as pressure media. The only fluids so far known by the author to be used in Japanese naval ordnance are: the standard mixture of distilled water and Argolene oil for 14" turrets and above, and mineral oil for 8" turrets and below.

PB L 81470. U. S. WAR DEPARTMENT. Barrage balloon winch, model L.A.W-1. (Manufactured by Wilson Manufacturing Co., Inc. Wichita Falls, Texas). (Tech Manual 5-7072). Dec 1943. 188 p. Price: Microfilm-$5.50 - Photostat-$19.00

PB L 81442. U. S. WAR DEPARTMENT. Barrage balloon winch, low altitude, model W-3. (Manufactured by Wilson Manufacturing Co., Inc., Wichita Falls, Texas). (Tech Manual 5-7070). Aug 1943. 147 p. Price: Microfilm-$4.50 - Photostat-$15.00

PB L 81471. U. S. WAR DEPARTMENT. Combined operator's manual, maintenance manual and spare parts list for kettle, asphalt repair, trailer-mounted, with motor-driven hand spray, 110-gal. capacity, Littleford, model US-66, with Lauson engines, model 558-1, 586 and 627 (for airborne organizations). (Manufactured by Littleford Bros., Inc., Cincinnati, Ohio). (Tech Manual 5-1156). Mar 1944. 127 p. Price: Microfilm-$4.00 - Photostat-$13.00

PB L 81453. U. S. WAR DEPARTMENT. Combined operator's manual: Maintenance manual and spare parts list for pump, asphalt, trailer-mounted, with distributor attachments, Littleford, model US-3C engine: LE ROL model D-1LO-P3. (Tech Manual 5-1026). Mar 1944. 249 p. Price: Microfilm-$7.00 - Photostat-$25.00

PB L 81456. U. S. WAR DEPARTMENT. Combined operator's manual: Maintenance manual and spare parts list for tank, asphalt, steel, trailer mounted, with steam coils, 1500 gal., Littleford model 102-S. (Tech Manual 5-1046). Mar 1944. 139 p. Price: Microfilm-$4.25 - Photostat-$14.00

PB L 81451. U. S. WAR DEPARTMENT. Hypochlorination unit, automatic, portable, 2 to 100 GPM flow, Wallace and Tiernan, model A-506: Operation, maintenance, and repair instructions. (Tech Manual 5-2032). Jun 1945. 110 p. Price: Microfilm-$3.50 - Photostat-$11.00

PB L 81443. U. S. WAR DEPARTMENT. Maintenance instructions and parts catalog: Water purification unit, gasoline engine-driven stationary, 50-GPM, Wallace & Thiernan, model A-521, (knockdown type). (Tech Manual 5-2066). Mar 1944. 274 p. Price: Microfilm-$7.00 - Photostat-$32.00

PB L 81446. U. S. WAR DEPARTMENT. Maintenance manual and parts catalog for digger, clay, pneumatic, independent pneumatic, Thor, No. 412, model 4913. (Manufactured by Independent Pneumatic Tool Co., Chicago, Ill.) (Tech Manual 5-4024) Feb 1944. 33 p. Price: Microfilm-$1.75 - Photostat-$4.00

PB L 81469. U. S. WAR DEPARTMENT. Maintenance manual and parts catalog for kettle, asphalt-repair, trailer-mounted, with motor-driven hand spray, 165-gal. Capacity, Littleford model 84-hd-3, series "T". (Tech Manual 5-1158). May 1944. 127 p. Price: Microfilm-$4.00 - Photostat-$13.00

PB L 81472. U. S. WAR DEPARTMENT. Maintenance manual and parts catalog: Kettle, asphalt, 165 gallon, with motor driven hand spray, trailer mounted, model 84-HD-3 series, F.R.S. (Manufactured by Littleford Bros., Inc., Cincinnati). (Tech Manual 5-1154). Apr 1943. 114 p. Price: Microfilm-$3.75 - Photostat-$12.00

PB L 81449. U. S. WAR DEPARTMENT. Operators' manual, maintenance manual and parts list, mobile water purification equipment. (Manufactured by Wallace & Tiernan Co., Inc. Newark, N. J.). (Tech Manual 5-2030). Dec 1942. 245 p. Price: Microfilm-$7.00 - Photostat-$25.00

PB L 81452. U. S. WAR DEPARTMENT. Operator's manual; Maintenance manual and parts list, portable water purification equipment. Model 1940. (Manufactured by Wallace & Tiernan Co., Inc., Newark). (Tech Manual 5-2000). n. d. 90 p. Price: Microfilm-$3.00 - Photostat-$9.00

PB L 81452-S. U. S. WAR DEPARTMENT. Water purification unit, portable, gasoline engine-driven, 15-GPM, Wallace and Tiernan, model 1940. (With Changes no. 1, Feb 28, 1945). (Tech Manual 5-2000, Tent. Supp.). Dec 1943. 35 p. Price: Microfilm-$1.75 - Photostat-$4.00

PB L 81447. U. S. WAR DEPARTMENT. Operators' manual; Maintenance manual and parts catalog. Pumping and hypochlorination unit, gasoline engine-driven, portable, 50 GPM, Wallace & Thiernan, model U-8600. (Tech Manual 5-2056). Mar 1944. 94 p. Price: Microfilm-$3.25 - Photostat-$10.00

PB L 81441. U. S. WAR DEPARTMENT. Water heater, model 5-C. (Manufactured by Littleford Bros., Inc., Cincinnati, Ohio). (Tech Manual 5-1152). Jan 1942. 21 p. Price: Microfilm-$1.75 - Photostat-$3.00

MINERALS AND MINERAL PRODUCTS

PB L 25618. NEW developments in the field of glass, cement, mortars, and other ceramic materials, particularly of blast furnace slags. (FIAT Microfilm Reel MM 175. Frames 1-787) n. d. 787 f. Price: Microfilm-$6.00 - Enlargement print-$79.00

This FIAT microfilm reel contains 53 reprints regarding cements, mortars and other building materials. Individual items are listed below and will be available as enlargement prints. Please give PB and frame numbers when ordering individual items from this microfilm reel. In German.

PB Number Frames	Title	Price
L 75749	Index. In German.	$1.50
L 75750 Frames 1-5	The determination of small quantities of iron oxide in raw materials and glass. By A. Dietzel. In German.	1.50

Minerals (contd)

L 75751 Frames 6-12 — The significance of the electron microscope in mineralogical research. By Wilhelm Eitel. In German. 1.50

L 75752 Frames 13-120 — The employment of mica in signals service and the use of substitutes. In German. 11.00

L 75753 Frames 121-124 — Ultra microscopic analysis of the hydration of lime. By O. N. Radozowski and others. In German. 1.50

L 75754 Frames 125-140 — The raw material situation of the German fire-proofing materials industry. By Fritz Harders. In German. 1.50

L 75755 Frames 141-145 — New developments in the field of fire-proof bricks. By Fritz Harders. In German. 1.50

L 75756 Frames 146-153 — Concrete tubes. By Richard Gruen. In German. 1.50

L 75757 Frames 154-167 — The shrinkage of mortar and concrete. By Richard Gruen. In German. 3.50

L 75758 Frames 168-208 — Effect of carbon dioxide on cement-mortar and concrete. By Richard Gruen. In German. 2.50

L 75759 Frames 209-216 — On the properties of ceiling concretes and the relationship between old and new standards. By R. Gruen and K. Obenauer. In German. 1.50

L 75760 Frames 217-220 — The slag pile installation at the Mannesmannröhren-Werke, Division Heinrich-Bierwes-Hütte. By Konrad Hupfer. In German. 1.50

L 75761 Frames 221-236 — Blast furnace slag for road construction. By Fritz Keil. In German. 2.00

L 75762 Frames 237-243 — The utilization of refuse slag as slag stone. By Richard Gruen. In German. 1.50

L 75763 Frames 244-251 — The new standard chart DIN DVM 2109. By F. Keil. In German. 1.50

L 75764 Frames 252-314 — Blast furnace slag as building material. In German. 6.50

L 75765 Frames 315-318 — Slag wool. In German. 1.50

L 75766 Frame 319 — High-grade insulating material. In German. 1.50

L 75767 Frames 320-331 — Mineral wool. By A. Guttmann. In German. 1.50

L 75768 Frames 332-340 — Utilization of blast furnace slag for the production of paving stones. (By Max Paschke and Dietrich Fastje) and Map of industries utilizing blast furnace slag. In German. 1.50
May reproduce poorly.

L 75769 Frames 341-365 — Cements from blast furnace slag and their utilization. By Richard Gruen. In German. 2.50

L 75770 Frames 366-373 — Magnesia cement as binding material for heavy concrete. By Gruen and Schlegel. In German. 1.50

L 75771 Frames 374-382 — Testing the solidification point of concrete. By Richard Gruen. In German. 1.50

L 75772 Frames 383-395 — On the effect of some salts, acids, and organic substances on cement and concrete. By Richard Gruen. In German. 1.50

L 75773 Frames 396-405 — Concrete for road construction. By Richard Gruen. In German. 1.50

L 75774 Frames 406-421 — New developments in the use of cement. By Richard Gruen. In German. 2.00

L 75775 Frames 422-459 — Thermic research on blast furnace slag. By Richard Gruen. In German. 4.00

L 75776 Frames 460-476 — Production, hardening, water-proof properties and resistance to mechanical attack of concrete in constructing mine pits. By Richard Gruen. In German. 2.00

L 75777 Frames 477-488 — Radiation heating through concrete layers. By Richard Gruen and K. Obenauer. In German. 1.50

L 75778 Frames 489-507 — Resistance to weather and mechanical attack of concrete. By Richard Gruen. In German. 2.00

L 75779 Frames 508-523 — The influence of addition of bitumen on concrete. By R. Gruen and K. Obenauer. In German. 2.00

L 75780 Frames 524-544 — The bending strength of samples of dry stored mortar. By Richard Gruen. In German. 2.50

L 75781 Frames 545-563 — The influence of addition of bitumen on the properties of cement mortar and concrete. By Richard Gruen and Hans Schlegel. In German. 2.00

L 75782 Frames 564-565 — Light construction with "Huettenbims" (pumice-like material resulting from smelting). In German. 1.50

L 75783 Frames 566-566B — New experiments and results with the "Huettenbims" construction method. By F. Schneider - Arnoldi. In German. 1.50

L 75784 Frames 567-568 — Dry granulation of blast furnace slag. By Jantzen and Buderus. In German. 1.50

L 75785 Frames 569-580 — Characteristics and use of "Huettenbims." By Lothar Krueger. In German. 1.50

L 75786 Frames 581-588 — Employment of blast furnace slag in agriculture. By Herbert Kappen. In German. 1.50
Will reproduce poorly.

L 75787 Frames 589-592 — Standardization of fireproof building materials for blast furnace and heaters. In German. 1.50

L 75788 Frames 593-596 — Blast furnace slag, a universal building material. By W. Kosfeld. In German. 1.50

L 75789 Frames 597-609 — Destruction of concrete and its prevention. By Richard Gruen. In German. 1.50

L 75790 Frames 610-617 — The German farm. By Richard Gruen. In German. 1.50

L 75791 Frames 618-628 — Testing gravel for content of organic matter, using sodium hydroxide. By Richard Gruen and H. Schlegel. In German. 1.50

L 75792 — Concrete, 1850 years old, used as

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Minerals (contd)

Frames 629-646 — artificial stone. By Richard Gruen. In German. 2.00

L 75793 Frames 647-747 — Silicic acid gel and bleaching earth. By Oskar Kausch. In German. Partly illegible. 10.50

L 75794 Frames 748-751 — Outlook of the clay factory Muellenbach & Thewald, Hoehr-Grenzhausen. In German. 1.50

L 75795 Frames 752-758 — Centrifuges and sieves in handling of earth. By G. Gerth, Siegen. In German. 1.50

L 75796 Frames 759-764 — Preparation of domestic clays and kaolins. In German. 1.50

L 75797 Frames 765-769 — New German raw materials in ceramics. In German. 1.50

L 75798 Frames 770-774 — Washing of kaolins and clays with the addition of chemicals. In German. 1.50

L 75799 Frames 775-776 — The characteristics of the clay mineral montmorillonite under the electron microscope. By W. Eitel and O. M. Radczowski. In German. 1.50

L 75800 Frames 777-780 — The determination of the grain distribution in clays by means of the electron microscope. By Wilhelm Eitel and Carl Schusterius. In German. 1.50

L 75801 Frames 781-787 — Experiments on silicic acid sols by means of the electron microscope. By O. M. Radczowski and M. Richter. In German. 1.50

PHYSICS

General

PB L 81333. CALIFORNIA. UNIVERSITY. DIVISION OF WAR RESEARCH. Transmission of 24 KC sound at short ranges. (Rept UCDWR M471). May 1946. 17 p. Price: Microfilm-$1.25 - Photostat-$2.00
This report concerns work done by the University of California, Division of War Research. It represents part of a general study of supersonic underwater sound transmission being carried out by the Echo-Ranging Section. Experimental work was carried out with the assistance of the sea-going and equipment groups of the Echo-Ranging Section, and the data were analyzed and here reported by M. J. Sheehy. Tables and charts are included.

PB L 81153. CAMPBELL, D. C. Experiments in the production and photography of intersecting underwater shock waves. (David W. Taylor Model Basin Rept R-203) Sep 1943. 10 p. Price: Microfilm-$1.00 - Photostat-$1.00
This report describes attempts to produce simultaneous explosions for an investigation of intersecting underwater shock waves. The experiments are explained by sketches and the results are given in the form of photographs. No attempt is made to analyze the results.

PB L 81140. CAMPBELL, D. C. Motion of a pulsating gas globe under water: A photographic study. (David W. Taylor Model Basin Rept 512) May 1943. 63 p. Price: Microfilm-$2.50 - Photostat-$7.00
High-speed motion pictures of small underwater explosions were made under laboratory conditions. Enlargements of selected frames in several of these series are reproduced to show the pulsations of the gas globe and the influence of boundary surfaces on its motion. The shock wave does not appear in the photographs. Data obtained from the photographs are plotted and the results are analyzed in terms of diameter as a function of time, of period, and of migration of the globe.

PB L 81142. CAMPBELL, D. C. and WICKOFF, C. W. Small-scale underwater explosions under reduced atmospheric pressure. (David W. Taylor Model Basin Rept 520) Nov 1943. 34 p. Price: Microfilm- $1.75 - Photostat- $4.00
Tests have been conducted in the 24-inch variable pressure water tunnel to determine the effect of variation of pressure on the gas globe and shock wave produced in an underwater explosion. Recording was made by means of three types of high-speed photography: 1. Streak silhouette photographs, 2. Stroboscopic motion pictures, and 3. Micro-flash still pictures. The data obtained show good agreement with available theories. The pulse frequency decreases with increased globe diameter and the globe diameter increases with decreased pressure. There was no visible alteration in the form of the shock wave obtained at various pressures. Some information is presented on the formation of cavitation bubbles. A suggestion of the relationship between the pulsating gas globe and the above-water plume is also presented.

PB L 81155. DONOGHUE, J. J. The effect of an air-bubble screen on pressures due to underwater explosions. (David W. Taylor Model Basin Rept R-177) Aug 1944. 27 p. Price: Microfilm-$1.50 - Photostat-$3.00
A screen of air bubbles interposed between a small-scale underwater explosion and a pressure gage is found to cut off the pressure peak to reduce slightly the transmitted impulse, and to reduce greatly the energy reaching the gage. Accurate observation of the later stages of the action requires the use of gage cables that do not introduce spurious signals. Attention is called to some of the nonlinear properties of bubble screens. A microflash photograph is presented, showing the progress of a shock wave along a thin sheet of air bubbles.

PB L 81158. EDGERTON, HAROLD E. Photographic methods of recording behavior of steel diaphragms under explosive load. (David W. Taylor Model Basin Rept R 66). Aug 1942. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00
The use of the micro-flash single exposure camera for photographing gas bubbles and other objects under water during the explosion experiments of 1941 is explained, with diagrams, in reference (1) " A Photographic Study of Small-Scale Underwater Explosions Test Report, Aug., 1941." The method of setting up the motion picture cameras, the illuminating lamps and auxiliary devices for the explosion work of 1942 is described in this report which includes figures and illustrations.

PB L 81157. EDGERTON, H. E. and others. Photographic studies of shock waves in water. (David W. Taylor Model Basin Rept R 77). Nov 1942. 15 p. Price: Microfilm-$1.25 - Photostat-$2.00
Several photographs of shock waves in water have been obtained during investigation of underwater explosives at the David W. Taylor Model Basin. No definite program of research has been followed and the pictures included herewith are preliminary to any set course of investigation. No conclusions have been drawn as the photographs for the most part speak for themselves. Fourteen photographs and eight figures showing arrangement of equipment used to obtain the photographs are included.

PB L 81046. HANSON, R. O. and WATKINS, W. B. Equalizer design. (Columbia Univ Div War Res Memo P37/R1278). Jan 1945. 56 p. Price: Microfilm-$2.00 - Photostat-$4.00
This memorandum described equalizer design examples which cover cases encountered in practice, and illustrate the use of equalizer charts shown in Chapter XVI of "Motion Picture Sound Engineering," 1938, D. Van Nostrand Company, as well as the "Equalizer Design Tables" as compiled by the "New London Laboratory Recording Department," and three solutions to typical equalizer design problems. Tables and twenty-nine charts are included.

PB L 85547. HOFF, H. B. and others. Statistical analysis of Miami area ambient noise survey data. (Columbia Univ Div of War Res Rept D46A/R863). May 1944. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00
This memorandum presents the results of a statistical analysis of the data taken on the first four cruises of the Miami area ambient noise survey conducted from Jun. 27 to Aug. 9, 1943. A total of 191 measurements are included in the present statistical analysis. These data include analyses of water noise, shrimp noise, ship noise, croaker noise, unidentified biological noise, and combinations thereof. Four plotted charts are included.

PB L 81145. HUDSON, G. E. and others. Underwater explosion research. Progress report. Parts 24-26. (David W. Taylor Model Basin Rept R-296). Apr 1945. 39 p. Price: Microfilm-$1.75 - Photostat-$4.00
This progress report, Parts 24, 25 and 26, deals with various phases of the experimental program at the David Taylor Model Basin which relate to the protection of ships from the effect of underwater explosions. No attempt is made to cover all phases in each progress report. Part 24 is entitled: "Analysis of the explosion damage from two small charges fired against the hull of a Liberty Ship"; Part 25: "Energy absorption of steel plates of different thicknesses under dynamic or static loading"; Part 26: "The resistance of thick fused-quartz and plastic plates to static and underwater explosion pressures." Five tables and 25 illustrations are included.

PB L 81139. KENNARD, E. H. Explosive load on underwater structures as modified by bulk cavitation. (David W. Taylor Model Basin Rept 511) May 1943. 28 p. Price: Microfilm-$1.50 - Photostat-$3.00
Whereas cavitation is most commonly observed at the interface between water and a solid surface, there are indications that it may also occur in the midst of a mass of water. Such cavitation may modify the action of explosive pressure waves upon structures. This is possible wherever reflection of the wave gives rise to tension in the water. An extension of hydrodynamical theory to cover such cases is described in this report. It is shown that cavitated regions should be formed through the propagation of breaking-fronts moving at supersonic velocity. The cavitation should usually take the form of small bubbles continuously distributed, rather than of large voids. Subsequently the cavitation will be destroyed as the boundary of the cavitated region contracts and acts as a closing-front. The relevant mathematical formulas are cited. Similitude relations are discussed, and the theory is applied to a plane wave falling normally upon a plate, and to the explanation of the dome that is formed over large charges exploded in the sea.

PB L 81150. KENNARD, E. H. and others. Underwater explosion research. Progress report. Progress report, Parts 6-9. (David W. Taylor Model Basin Rept R-244). Apr 1944. 20 p. Price: Microfilm-$1.25 - Photostat-$2.00
This progress report, Parts 6,7,8 and 9, deals with various phases of the experimental program at the David Taylor Model Basin which relate to the protection of ships from the effects of underwater explosions. Part 6 is entitled, "Notes on the shock in ships due to an underwater explosion"; Part 7: "A family of surfaces of revolution representing shapes of deformed circular diaphragms"; Part 8: "The effect of temperature changes on calibrations of piezoelectric gages" and Part 9: "The termination of transmission lines used with piezoelectric gages." Tables, figures and diagrams are included.

PB L 86749. KOJIMA, KOHEI. The K-absorption edges of Co and its compounds. May 1934. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00
This document is a record of a comparison made by the photographic method of the wave-lengths of the K-edges of pure Co and two types of its compounds. It is a reprint from the Memoirs of the College of Science, Kyoto Imperial University, Series A, Vol. 17, No. 4, 1934; the text is in English and includes one diagram and one photographic plate.

PB L 81136. PARKINSON, J. S. Impact measurements on a free-edge plate. (David W. Taylor Basin Rept 488) Jan 1942. Price: Microfilm-$1.25 - Photostat-$2.00
A brief discussion is given of the problems in measuring acceleration forces resulting from projectile impact on armor plate. The questions raised by recent tests at the Dahlgren Proving Ground are listed. A laboratory set-up is described which permits variation in point of impact, velocity of impact, and duration of impact. The effect of these variables on the vibration frequency is examined, and it is shown that duration is of principal importance. The question of multiple impacts is discussed and the physical conditions are described which control their occurrence. A method of recording duration of single and multiple impacts is outlined and records are given. Edgerton's method of measuring deflection-time relations by means of vibrating strings is described and typical records are given. The frequencies present in various test records are examined as well as the factors which control their occurrence.

PB L 85545. PROUDFOOT, D. A. Underwater sound survey - Fishers Island. (Columbia Univ Div of War Res Rept D12C/RM01). May 1943. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00
This memorandum provides a brief record of the results obtained during survey, covering a period of six weeks, in the area near the proposed cable-connected hydrophone location of Fishers Island. The survey was conducted for the purpose of investigating the ambient noise conditions and sound transmission properties of the water with regard to establishing the suitability of the location for the installation of listening hydrophones.

PB L 81149. REEP, W. P. and others. Underwater explosion research. Progress report. Parts 19-20. (David W. Taylor Model Basin Rept R-265). Jul 1944. 30 p. Price: Microfilm-$1.50 - Photostat-$3.00
This progress report, Parts 19 and 20, deals with various phases of the experimental program at the David Taylor Model Basin which relate to the protection of ships from the effect of underwater explosions. No attempt is made to cover all phases in each progress report. Part 19 is entitled: "Notes on the conditions of brittle rupture of ship plates of medium steel," and Part 20: "Calculation of the principal strains of small, thin diaphragms dynamically loaded." Tables, figures and diaphragms are included.

PB L 81147. SPECHT, R. and others. Underwater explosion research. Progress report. Parts 21-23. (David W. Taylor Model Basin Rept R-279). Dec 1944. 20 p. Price: Microfilm-$1.25 - Photostat-$2.00
This progress report, Parts 21, 22 and 23, deals with various phases of the experimental program at the David Taylor Model

Basin which relate to the protection of ships from the effects of underwater explosions. Part 21 is entitled "Vibration of elastically clamped beams"; Part 22: "The effect of contact or near-contact explosion on a freely suspended plane target"; Part 23: "Notes on plastic deformation of elliptical plates under hydrostatic pressure." Seven figures are included.

PB L 81134. TRILLING, CHARLES. The influence of stiffening rings on the strength of thin cylindrical shells under external pressure. (David W. Taylor Model Basin Rept 396) Feb 1935. 26 p. Price: Microfilm-$1.50 - Photostat-$3.00

This report considers the strength of the frames or circumferential stiffening rings of thin circular cylindrical shells subjected to external pressure, and the influence of the size of the stiffeners upon the strength of the shell. A survey is made of the theoretical work pertaining to this problem. Theoretical formulas are compared with the results of tests conducted at the U. S. Experimental Model Basin on a series of model pressure vessels with frames of varying size. Changes in the present design of frames of a submarine pressure hull are suggested in the report. The changes proposed would result in an appreciable reduction in the weight of the frames. This weight could be either saved or distributed to better advantage. The conclusions reached are based both upon theoretical considerations and upon the results of the model experiments.

PB L 81533. U. S. NAVY DEPARTMENT. BUREAU OF ORDNANCE. Technical conference on shock waves and supersonic flow. (Rept 203-45). Jul 1945. 44 p. Price: Microfilm-$2.00 - Photostat-$5.00

This report constitutes the minutes of the conference on "Shock Waves and Supersonic Flow" sponsored by the Bureau of Ordnance and held at the Institute for Advance Study at Princeton, New Jersey, on Mar. 19, 1945. It has been prepared by the Secretary, Dr. R. J. Seeger. The findings herein represent the interpretations of the authors and are not necessarily views of the Bureau of Ordnance. A chart and figures are included.

PB L 85532. WESTMEAT, A. S. Test report on Brush Development Company JQ amplifier. (Columbia Univ Div of War Res Rept C7/RM18). Jun 1943. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00

This memorandum describes the performance of the Brush Development Company JQ amplifier type CBD 50137, Serial 1, in the audio frequency range from 100 to 20,000 cycles per second. No attempt was made to test the supersonic range. Fig. 1 shows the frequency response of the audio amplifier for different source impedances; Figure 2 shows the frequency characteristic of the audio amplifier and of the audio amplifier in tandem; and Figures 3A and 3B show variations of meter readings.

PB L 86751. YAMAMOTO, G. Some investigation on evaporation. n. d. 27 p. Price: Microfilm-$1.50 - Photostat-$3.00

This document is a record of experiments conducted to consolidate and expand the results of an earlier investigation on evaporation aimed at discovering the relation between rate of evaporation and wind velocity (using wetted surfaces of controlled dimensions and using fixed wind velocities). Results of experiments are shown through the use of nine diagrams and numerous mathematical formulae. The text is in English. The author is a member of the Geophysical Institute, Tohoku University, Sendai, Japan.

Nuclear

A group of reports (PB L 81388 - PB L 81401) on fluorine, fluorine compounds, fluorocarbon studies and fluorination of various compounds are listed in this Bibliography under the heading "Chemicals and Allied Products--Miscellaneous Chemicals." These reports have been released by the U. S. Atomic Energy Commission. They were published in the Journal of Industrial and Engineering Chemistry, March 1947, and reprints of the individual papers are available from the American Chemical Society at the prices stated.

PB L 86770. DAVISON, B. Linear extrapolation length of the neutron density at the surface of a large hollow cylindrical shaft. (Canada. Natl Res Council Rept 1634). n. d. 55 p. Price: Microfilm-$2.25 - Photostat-$6.00

The purpose of this report is to obtain an expression for the linear extrapolation length of the neutron density at the surface of a cylindrical hollow shaft of circular cross section passing through an infinite homogeneous medium. The medium is slightly multiplying and an isotropic elastic scatterer of neutrons. The neutron density is assumed to be a simple sinusoidal function of the coordinate parallel to the axis of the shaft. An approximate expression for the linear extrapolation is determined and expressed in an equation. Application of the expression to various problems is considered.

PB L 86472. DEMERS, P. Photographic emulsion: Study of Po-Be neutrons. (Natl Res Council of Canada. Atomic Energy Proj. MP Rept 74; NRC Rept 1571). Jan 1945. 14 p. Price: Microfilm-$1.25 - Photostat-$2.00

1800 proton recoil tracks from Po-Be neutrons, in a photographic emulsion, were measured. The energy spectrum of the neutrons from this source is given. Graphs are included.

PB L 86470. DEWHURST, H. and MILLER, N. Concentration of Fe^{59} activity by Szilard - Chalmers separation. (Natl Res Council of Canada. Atomic Energy Proj. CRC Rept 351; NRC Rept 1616). Sep 1947. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00

Irradiation of 30 g. of potassium ferrocyanide crystals in the pile, followed by solution of the crystals in water and precipitation of added aluminum carrier as hydroxide from the solution, results in a clean separation of the 47-day Fe^{59} activity on the precipitate. Details of the experimental procedure are given. This procedure was checked in two 16-KWH and one 32- KWH irradiations.

PB L 86771. DUNWORTH, J. V. and PONTECORVO, B. Excitation of indium 113 by X-rays. (Canada. Natl Res Council Rept 1631). Jan 1947. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00

It is shown that In^{113*} can be obtained by nuclear excitation of indium by X-rays. The cross-section per nucleus for the production of In^{113*} with 2 MeV. X-rays is of the same order as the cross-section for the production of In^{115*}. The decay period of In^{115*}, for which some discrepancy was apparent in the literature, was definitely proved to be 4-5 hr. A reprint from The proceedings of the Cambridge Philosophical Society, v. 43, Jan. 1947.

PB L 86772. ENGLISH, A. C. and others. The (4n+1) radioactive series. (Canada. Natl Res Council Rept 1565). Aug 1947. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00

The three radioactive series known to occur naturally are characterized by members whose mass numbers are represented by the integers 4n (thorium series), (4n + 2) (uranium series), and (4n+3) (actinium series). While the existence of a fourth series comprising the "missing" radioactive (4n + 1)-isotopes has been variously postulated, early searches for its members in natural minerals gave negative results. Since 1937, species have been produced by artificial transmutation. The authors here report briefly an investigation of the route taken by the chain. Reprinted from The physical review, Aug. 1, 1947.

PB L 86775. FELL, J. M. G. Effects of a hollow shaft passing through the reflector of a pile. (Canada. Natl Res Council Rept 1635). Dec 1946. 41 p. Price: Microfilm-$2.00 - Photostat-$5.00
By using a one-group model of neutron multiplication, this report calculates the change in the critical Laplacian of the core of a pile required to compensate the effect of a hollow cylindrical shaft through the reflector close to the core. The nuclear constants of the system are L, the diffusion length in the reflector; σ, the ratio of the diffusion coefficients in the core and reflector; ℓ, the total mean free path in the reflector; and $\varkappa^2$, the Laplacian of the core. The values of L, ℓ and σ being fixed, let $\varkappa_0^2$ be the Laplacian of the core for which the system is just critical without the shaft, $\varkappa_1^2$ the critical Laplacian with the shaft, and $\varkappa_2^2$ the critical Laplacian for the bare core. This report develops a general method of determining $\varkappa_1^2$ applicable to a wide range of geometrical forms. This method is then applied to the case of concentric spheres for the surfaces of the core and reflector. In this case $\varkappa_0^2$ and $\varkappa_2^2$ are easily determined. Finally numerical computations are carried through for a particular set of dimensions: the diameters of the spherical core, cylindrical shaft and spherical reflector 1 foot, 1 foot and 5 feet respectively.

PB L 86471. GRAHAM, G. A. R. and others. Neutron absorption in manganese: Part I - Thermal capture cross section. Part II. Absorption in the resonance region. (Natl Res Council of Canada. Atomic Energy Proj. MC Rept 183; NRC Rept 1590) Oct 1945. 13 p. Price: Microfilm-$1.25 - Photostat-$2.00
The absorption cross section of manganese for thermal neutrons has been compared to that of hydrogen by neutron density distribution measurements in aqueous manganese sulphate solutions and in water. The resonance contribution has been estimated by measurement of the β-activities of the Mn^{56} induced in manganese sulphate solutions and in solutions of manganese and cadmium sulphates. The ratio of the absorption cross sections of manganese and hydrogen for thermal neutrons, σ_{Mn}/σ_H, is found to be 39 $\pm$ 2.

PB L 87000. GREAT BRITAIN, MINISTRY OF SUPPLY. DEPARTMENT OF ATOMIC ENERGY. Atomic energy reports BDDA 1-67. (Microfilm reel, Frames not numbered consecutively). 1941-1945. 874 f. Price: Microfilm-$7.00 - Enlargement Print-$89.00
This is the first of three British reels containing declassified documents on atomic energy. BDDA reports 68-73 are in PB L 87001 and BDDA reports 74-98 are in PB L 87002. For abstracts of the individual reports in this reel, see the following entries (PB L 87003-PB L 87069). Each report is also available separately. Crown copyright is reserved for such report.

PB L 87003. FEATHER, N. Investigation of the delayed neutron emission from fission products using a modulated source of primary neutrons. (Gt Brit Dept of Atomic Energy BDDA 1; Rept BR 258). Aug 1941. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00
Mathematical formulas and general considerations are outlined.

PB L 87004. PEIERLS, R. Streamline flow through a pipe of rectangular cross-section. (Gt Brit Dept of Atomic Energy BDDA 2; Rept MS 24). n. d. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00
Formulas and a table are given.

PB L 87005. FRISCH, O. R. On the possibility of a slow-neutron chain reaction. (Gt Brit Dept of Atomic Energy BDDA 3; Rept MS 1). n. d. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00
Considerations with respect to producing a chain reaction depending on the fission of uranium by slow neutrons are given.

PB L 87006. PEIERLS, R. Separation of a mixture of three components. (Gt Brit Dept of Atomic Energy BDDA 4; Rept MS 20). n. d. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
The influence of the presence of a third component in a cascade plant is discussed. The aim of the plant is to obtain as high a concentration as possible of the component of medium mass, considering the presence of the lightest component as useless or even harmful.

PB L 87007. FEATHER, N. On the counting of neutrons using a thick layer of hydrogen-rich material and a 'proportional' counter. (Gt Brit Dept of Atomic Energy BDDA 5; Rept BR 256). Mar 1942. 7 p. Price: Microfilm-$1.00 - Photostat-$1.00
The calculations of this note were prompted by the consideration of a formula applicable to the use of a hydrogen-filled ionization chamber.

PB L 87008. FEATHER, N. Directional correlation in fission processes: calculations relative to possible experiments. (Gt Brit Dept of Atomic Energy BDDA 6; Rept BR 262). Apr 1942. 8 p. Price: Microfilm-$1.00 - Photostat-$1.00
It is the purpose of this note to discuss the possibility of a direct experimental investigation of two cases of directional correlation (neutron-fragment and neutron-neutron correlation), if the neutron-emission processes are complete within 10^{-12} sec. of the moment of fission.

PB L 87009. DIRAC, P.A.M. The motion in a self-fractionating centrifuge. (Gt Brit Dept of Atomic Energy BDDA 7; Rept BR 42). n. d. 10 p. Price: Microfilm-$1.00 - Photostat-$1.00
The following sections are contained in this report: General remarks; the equations of motion; reduction to an eigenvalue problem; approximate solution of the eigenvalue equation; and numerical values.

PB L 87010. FRISCH, O. R. Isotope analysis of uranium samples by means of their α-ray groups. (Gt Brit Dept of Atomic Energy BDDA 8; Rept BR 49). n. d. 8 p. Price: Microfilm-$1.00 - Photostat-$1.00
The method depends on the fact that, in an ionization chamber filled with pure nitrogen, saturation can be readily obtained; all the negative ions produced along the track of an α-particle can be drawn to the collecting electrode. Results are shown in graphs.

PB L 87011. FEATHER, N. Absorption measurements on the radiation from $^{238}_{92}U$ and $^{239}_{93}$. (Gt Brit Dept of Atomic Energy BDDA 9; Rept BR 46). Jul 1942. 27 p. Price: Microfilm-$1.50 - Photostat-$3.00
This report describes work done on absorption measurements at various times from December 1940 to June 1941. The information presented is incomplete but is presented for comparison with the results obtained by different methods, and with stronger sources, by American workers. A number of graphs are included.

PB L 87012. ROTBLAT, J. Determination of number of neutrons emitted from a source. (Gt Brit Dept of Atomic Energy BDDA 10; Rept BR 227). Oct 1942-Jan 1943. 20 p. Price: Microfilm-$1.25 - Photostat-$2.00
In order to determine the number of neutrons emitted from a source the density distribution of slow neutrons in a water tank was measured by means of radioactive detectors. The detectors employed were gold (Au^{198}, half-period 2.76 days) and manganese (Mn^{56}, half period 2.6 hours), and the absolute number of disintegrations in them was determined by means of coincidence measurements between β and γ-rays. Assuming certain values for the ratios of capture cross-sections of the detector elements to hydrogen, the neutron yield of the

laboratory standard (Ra+Be) source was determined. Using a reproducible Ra+Be source it was found that the number of neutrons emitted from it is 16,000 per second per millicurie of radon.

PB L 87013. FRIEDLANDER, F. G. Note on the theory of supersonic diffusers. (Gt Brit Dept of Atomic Energy BDDA 11; Rept MS 67). Oct 1942. 15 p. Price: Microfilm-$1.25 - Photostat-$2.00

The object of a "diffuser" in a centrifugal compressor is to convert some of the kinetic energy of the gas leaving the impeller into pressure energy. The physical principles which govern the design of diffusers in the supersonic case do not seem to have been investigated in any detail so far. In this Note a simplified theory is outlined, in which an idealised flow is assumed and the effect of viscosity is neglected. The diffuser is replaced, for this purpose, by one working in a parallel stream of gas; using some of the known properties of the flow of gases at supersonic speeds, some simple types of diffuser are suggested and discussed. The modifications which the results obtained in this way would have to undergo if the actual working conditions were considered are indicated briefly at the end. Diagrams are included.

PB L 87014. FRIEDLANDER, F. G. Flow in the 'gap' between the impeller and diffuser. (Gt Brit Dept of Atomic Energy BDDA 12; Rept MS 67A). Oct 1942. 7 p. Price: Microfilm-$1.00 - Photostat-$1.00

The ideal flow in the "gap" between the impeller and the diffuser is a stationary flow with axial symmetry. The present investigation is based on the assumption that the velocity components of the actual flow differ from those of the ideal one only by small quantities. Only two types of disturbances are considered: those which are stationary and disturbances introduced by the rotating impeller. Boundary conditions are necessarily approximated and these make the value of the results very doubtful. Tables and graphs are included. The report will not reproduce very distinctly.

PB L 87015. PEIERLS, R. Energy distribution of fission neutrons. (Gt Brit Dept of Atomic Energy BDDA 13; Rept MS 65). n. d. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00

It is worthwhile to see whether one can derive the distribution of emission velocities from the observed energy distribution. This requires making specific assumptions about the angular distribution of the neutrons. It is concluded either that the neutron emission is not isotropic or that they are not emitted from a moving fragment at all.

PB L 87016. FEATHER, N. On a modification of an experiment suggested by Holt, Peierls and Frisch. (Gt Brit Dept of Atomic Energy BDDA 14; Rept BR 264). Nov 1942. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00

The experiment referred to suggests that possible delays of the order of 10^{-9} to 10^{-4} sec. in the emission of the secondary neutrons of fission might be detected in an experiment in which the fission fragments emerging from a thin layer of uranium deposited on the outer surface of a proportional counter are (a) stopped in solid matter immediately outside the counter, or (b) allowed to travel to the walls of a partially evacuated vessel surrounding the counter. A modification of this arrangement is suggested which may be made more sensitive for delay periods greater than 10^{-8} sec. and has certain other advantages.

PB L 87017. KYNCH, G. J. The blast wave due to an intense explosion. Parts I and II. (Gt Brit Dept of Atomic Energy BDDA 15; Rept MS 69). Dec 1942. 11 p. Price: Microfilm-$1.25 - Photostat-$2.00

A mathematical solution is given of the propagation of a blast wave due to an explosive occupying a small space, so that the pressure in the wave is still much greater than atmospheric pressure at distances large compared with the size of the charge. Part II deals with propagation in a medium of varying density.

PB L 87018. FUCHS, K. and others. The equation of state of air at high temperatures. (Gt Brit Dept of Atomic Energy BDDA 16; Rept MS 61). Dec 1942. 22 p. Price: Microfilm-$1.50 - Photostat-$3.00

After the detonation of an explosive in a medium, a wave across which there is a discontinuity of pressure, temperature and density travels out through the medium. To determine its propagation the properties of the medium are required over a large range of pressure and temperature. The treatment of this report is in two parts: (1) The calculation of the partition functions of the assembly of possible constituents of the mixture at high temperatures; and (2) the calculation of the fraction of atoms of each type and the number of electrons present, for a number of different temperatures. The partition function of the mixture is then obtained.

PB L 87019. BRETSCHER, E. and MURRELL, E. B. M. Determination of the total neutron collision cross-section for hydrogen and carbon. (Gt Brit Dept of Atomic Energy BDDA 17; Rept BR 137). n. d. 16 p. Price: Microfilm-$1.25 - Photostat-$2.00

In order to determine the fission cross section of Uranium for neutrons it is necessary to know the neutron flux from the source. This quantity can be obtained from observations of the number of proton recoils from hydrogenous material if the proton-neutron cross section for the energy range under consideration is known. This quantity was therefore determined. The experimental procedure is described. Results are presented in tables and graphs.

PB L 87020. HALBAN, H. and others. The ratio between absorption cross-sections of B and H. (Gt Brit Dept of Atomic Energy BDDA 18; Rept BR 135). Jan 1943. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00

The ratio σ_B/σ_H has been measured earlier by measuring the density distribution of thermal neutrons coming from a Ra-α-Be source, in solutions of boric acid in water. A small boron-lined chamber was used as detector. A repetition of this experiment was considered desirable: (a) with Dysprosium detectors; and (b) with a BF_3 chamber similar to that used in the laboratory for absolute neutron measurements. A graph is included. Reproduction of this report may be indistinct.

PB L 87021. PARK, J. R. Fluorinated lubricants. (Gt Brit Dept of Atomic Energy BDDA 19; Rept BR 84). Jan 1943. 1 p. Price: Microfilm-$1.00 - Photostat-$1.00

Viscosity temperature curves were determined for samples of fluorinated lubricants and the results tabulated and compared with the results obtained with standard lubricating oils of the hydrocarbon type.

PB L 87022. FRIEDLANDER, F. G. Some theoretical results on the flow in supersonic diffusers. (Gt Brit Dept of Atomic Energy BDDA 20; Rept MS 74). n. d. 13 p. Price: Microfilm-$1.25 - Photostat-$2.00

In this paper the behavior of a given diffuser in a centrifugal compressor is examined under varying conditions at its entry. Several conclusions of a qualitative nature are drawn. A diffuser can only be worked at the critical entry speed if the gas stream entering it is exceptionally steady. In order to avoid separation of the boundary layer from the diffuser walls in the contraction, and high energy losses in the flow immediately behind the thrust, the contracting part of the diffuser channel should be long and gradual. Diagrams are included. The copy is somewhat blurred.

PB L 87023. KOWARSKI, L. and others. Use of a small boron chamber for measuring absolute yields of neutron sources. (Gt Brit Dept of Atomic Energy BDDA 21; Rept BR 134). Jan 1943. 12 p. Price: Microfilm-$1.25 - Photostat-$2.00

If the density distribution of slow neutrons is determined with a small BF_3 chamber in a widely extended medium containing H and B in such a proportion that the absorption by H can be considered as a small corrective term, the absolute yield of the neutron source used can be calculated without

any knowledge of absorption cross sections (except for a rough idea of the σ_a/σ_s ratio), provided the boron count is 100% true. The construction of a suitable boron chamber is described and discussed; density measurements in a 3.85% solution of boric acid are described, various corrections applied and the yield of one millicurie of Rn+Be is estimated at about 14000 (very probably less than 15000) neutrons per second.

PB L 87024. FRIEDLANDER, F. G. On a shock wave problem arising in the theory of supersonic diffusers. (Gt Brit Dept of Atomic Energy BDDA 22; Rept MS 73). n. d. 8 p. Price: Microfilm-$1.00 - Photostat-$1.00
A problem involved in the use of diffusers for slowing up and compressing a supersonic stream of gas is to find what kind of flow is set up when gas, originally moving in a uniform parallel stream, is deflected into a parallel-walled channel partly by a shock wave and partly by a Meyer expansion. Calculations and graphs accompany this investigation of the problem.

PB L 87025. PEIERLS, R. and DAVISON, B. Density distribution near a point source. (Gt Brit Dept of Atomic Energy BDDA 23; Rept MS 76). n. d. 7 p. Price: Microfilm-$1.00 - Photostat-$1.00
Mathematical calculations and graphs for density distribution are presented for an infinitely extended medium in which particles are subject to isotropic scattering absorption and possibly multiplication.

PB L 87026. FRISCH, O. R. and PEIERLS, R. Light absorption by two black hemispheres. (Gt Brit Dept of Atomic Energy BDDA 24; Rept MS 77). n. d. 7 p. Price: Microfilm-$1.00 - Photostat-$1.00
The escape probability of a particle from a body of arbitrary shape is studied. Mathematical formulas and graphs are developed.

PB L 87027. FEATHER, N. Regularities in successive β-disintegrations. (Gt Brit Dept of Atomic Energy BDDA 25; Rept BR 312). Apr 1943. 12 p. Price: Microfilm-$1.25 - Photostat-$2.00
In the three series of "naturally occurring" radioactive bodies, β-active elements occur in pairs. A further regularity is pointed out. In each case, the first member of such a pair of "associated" β-active elements is of even atomic number. In this paper it is shown that a much wider regularity emerges, which, tested on the basis of present knowledge, admits of hardly an exception throughout the whole range of "natural" and "artificial" β-emitters. "When the mass numbers of the radio elements concerned are even, the disintegration constant of the first member of a pair of associated β-active bodies tends to be less than that of the second; when mass numbers are odd, the disintegration constant of the second member tends to be less than that of the first." Tables exhibit this regularity.

PB L 87028. DAVISON, B. Boundary conditions in the "modified diffusion theory" for the neutron density distribution in presence of a container (incomplete). (Gt Brit Dept of Atomic Energy BDDA 26; Rept MS 82). May 1943. 34 p. Price: Microfilm-$1.75 - Photostat-$4.00
The purpose of this paper is to determine the boundary conditions to be used in conjunction with the differential equations of the diffusion theory, and primarily in the case of a sphere surrounded by a non-absorbing container. Section 2 recapitulates the considerations underlying the "modified diffusion theory" for the case of the same mean free path throughout in application to sphere with a container and explains the principles from which the boundary conditions are derived, while the derivation of the boundary conditions according to those principles are given in section 3 and 4. Section 5 contains a discussion of the numerical results. See also PB L 87029.

PB L 87029. DAVISON, B. Boundary conditions in the "modified diffusion theory" for the neutron density distribution in presence of a container. (Gt Brit Dept of Atomic Energy BDDA 27; Rept MS 82A). Mar 1944. 21 p. Price: Microfilm-$1.50 - Photostat-$3.00
This is a revised edition of PB L 87028 (BDDA Rept 26; Rept MS 82). Section 5 has been revised and minor additions have been to other sections.

PB L 87030. HOWLETT, J. The blast wave due to an intense explosion. (Gt Brit Dept of Atomic Energy BDDA 28; Rept MS 79). n. d. 29 p. Price: Microfilm-$1.50 - Photostat-$3.00
This report describes work done in an attempt to find a method for the numerical integration of the equations giving the propagation in a gas of a spherically symmetric disturbance of great intensity. An essential feature of the problem is that in the conditions contemplated the ratio γ of the specific heats C_p, C_v of the disturbed gas does not remain constant; so that the adiabatic equation of the gas does not have the simple form $pp^{-\gamma} =$ constant, but is given in fact by a numerical relation of considerable complexity.

PB L 87031. FEATHER, N. On the counting of the α-particles emitted by "semi-thick" layers of uranium; effect of the variation on stopping power with velocity. (Gt Brit Dept of Atomic Energy BDDA 29; Rept BR 313). Jun 1943. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00
When the parallel plate ionization chamber is used to count the α-particles emitted from uniform layers of uranium (or uranium oxide) of appreciable thickness, a correction has to be made for "self-absorption" in the layer before the amount of active material in the layer can be calculated. Some method of extrapolation is necessary in order to deduce the total number of particles emerging from the layer. This report points out that this extrapolation is the less accurate the greater is the variation of the relative stopping powers of layer material and chamber gas with particle velocity. Graphs are included.

PB L 87032. FEATHER, N. α-particle group analysis using a parallel-plate ionisation chamber; effect of variation on stopping power with velocity. (Gt Brit Dept of Atomic Energy BDDA 30; Rept BR 314). Jun 1943. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00
The range distribution already obtained in relation to the problem of α-particle group analysis is discussed in this note. A curve is included.

PB L 87033. BELL, W. A. The estimation of deuterium in water by the temperature-float method. (Gt Brit Dept of Atomic Energy BDDA 31; Rept BR 265). Jul 1943. 19 p. Price: Microfilm-$1.25 - Photostat-$2.00
The submerged float method of measuring small density changes is probably the most accurate method known for the estimation of deuterium in water at very low concentrations. The apparatus developed at Billingham has been used for the determination of D-concentrations of 0.5% down to the normal water range. Six temperature-float units were constructed, the principal item of each unit being a constant temperature bath which could be controlled to 0.001°. Floats made of Pyrex glass and having a volume of about 0.7 c.c. were found to be very satisfactory. Determination of the "resting temperature" of the float in the water under examination was considerably simplified by the fact that the velocity of rise or fall of the float when near the resting point was a linear function of the temperature. The purity of the heavy water samples is a most important factor in determining the accuracy and sensitivity of the method. The purification scheme which was used included vapor phase oxidation over heated copper oxide and repeated distillations in specially designed apparatus. Deuterium concentrations were calculated from the observed density differences by means of Longsworth's equation, suitably modified for the temperature range covered by the floats. The error of a determination was estimated to be, in general, ± 25 p.p.m. D_2O ($\pm 2.5\ \gamma$ of density). In special circumstances it was possible to increase the accuracy to the order of ± 10 p.p.m. D_2O ($\pm 1.0\ \gamma$ of density). Photographs and diagrams are included.

PB L 87034. FRIEDLANDER, F. G. On the flow of gases through expanding pipes. (Gt Brit Dept of Atomic Energy BDDA 32; Rept MS 84). May 1943. 24 p. Price: Microfilm-$1.50 - Photostat-$3.00
This report is an account of a theoretical investigation whose object was to obtain information on the influence of friction on the diffuser flow of the compressor I-Z-I. A one-dimensional theory of steady gas flow in pipes of varying cross-section is employed. Graphs are included.

PB L 87035. DIRAC, P.A.M. Approximate rate of neutron multiplication for a solid of arbitrary shape and uniform density. (Gt Brit Dept of Atomic Energy BDDA 33; Rept MS D5 Part 1). n. d. 11 p. Price: Microfilm-$1.25 - Photostat-$2.00
Mathematical theory and equations are given for: (1) The method of chords; (2) Properties of the chord distribution function; (3) Form of $\psi(l)$ near the maximum l for an oblate spheroid and a hemi-oblate spheroid; (4) Approximate methods of determining $\psi(l)$; and (5) The discontinuity in $\psi(l)$ for a hemi-oblate spheroid. For part 2, see PB L 87036.

PB L 87036. DIRAC, P.A.M. and others. Application to the oblate spheroid hemisphere and oblate hemispheroid. (Gt. Brit Dept of Atomic Energy BDDA 34; Rept MS D5, Part 2). n. d. 17 p. Price: Microfilm-$1.25 - Photostat-$2.00
Application of the theory in PB L 87035 to the oblate spheroid hemisphere and oblate hemispheroid is given. Graphs are included.

PB L 87037. WILSON, A. H. A comparison of the approximate methods of calculating the critical size of a sphere. (Gt Brit Dept of Atomic Energy BDDA 35; Rept MS 89). Aug 1943. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00
The most important approximate methods for dealing with equations for determining neutron density in critical conditions for a body of any shape are the elementary diffusion theory and the infinite medium theory. Their relative merits are discussed.

PB L 87038. KYNCH, G. J. The loss of energy by fission fragments at high temperatures. (Gt Brit Dept of Atomic Energy BDDA 36; Rept MS 87). Jul 1943. 8 p. Price: Microfilm-$1.00 - Photostat-$1.00
The purpose of this note is to obtain in a simple fashion an approximate upper limit to the range of fission fragments in the metal sphere. After a short time any fragment produced moves in a field of nuclei and electrons produced by ionisation, and it may lose or gain energy by collisions with them. Only those energy changes due to elastic collisions with electrons are considered.

PB L 87039. HAWORTH, W. N. Physical properties of some ϕ -compounds. (Fluorinated compounds). (Gt Brit Dept of Atomic Energy BDDA 37; Rept BR 285). Aug 1943. 1 p. Price: Microfilm-$1.00 - Photostat-$1.00
A table gives parachor values for twelve compounds as calculated from the surface tension.

PB L 87040. SKYRME, T.H.R. Reduction in neutron density caused by an absorbing disc. (Bound with an appendix: Absorption of neutrons by a thin circular disc of radius comparable with the mean free path). (Gt Brit Dept of Atomic Energy BDDA 38; Rept MS 91; MS 91, Appendix). Sep 1943. 21 p. Price: Microfilm-$1.50 - Photostat-$3.00
Mathematical calculations and theory are presented for an approximate formula for the rate of capture of thermal neutrons by a circular disc when the neutron density outside the disc remains uniform and unaltered in value. This was found by treating the disc as part of an infinite thin slab; this will be greater than the proper value since some of the paths through the disc are shorter than approximation supposes. In the appendix, calculations are given showing that the difference is appreciable when the radius of the disc is comparable to the mean fr ath.

PB L 87041. BRODA, E. and others. Detector response to neutrons slowed down in media containing cadmium. (Gt Brit Dept of Atomic Energy BDDA 39; Rept BR 352). Sep 1943. 19 p. Price: Microfilm-$1.25 - Photostat-$2.00
B, Mn, La, I, Dy and Ir detectors were activated, with and without a Cd shield, near the source in a vessel containing 7 liters of water or solutions of $CdSO_4$ ranging between 0.1 and 2.8 mols per liter. Numerical data on observed activities are discussed in two different ways. After allowing for other causes of discrepancies between the behavior of B and that of other detectors, the following conclusions can be drawn: The capture cross-section of dysprosium decreases quicker than 1/v and this discrepancy becomes noticeable well within the limits of the C-group. This imposes obvious limitations on the use of Dy as a detector of thermal neutrons. Cadmium differences of manganese seem to be a reliable 1/v detector for the whole C-group. Indium and iridium show definite signs of an increase of $v\sigma$ in the upper regions of the C-group. Deviations shown by iodine are due to the imperfections of the technique rather than to a definite departure from the 1/v law. Attempts to study uranium 238 failed to give any reliable quantitative results owing to specific difficulties. Suggestions are put forward for improving the method and extending its scope.

PB L 87042. SKYRME, T.H.R. Escape of energy from a cylindrical ionisation chamber. (Bound with Distribution of energy absorbed in the cylinder). (Gt Brit Dept of Atomic Energy BDDA 40; Rept MS 94; MS 94 Appendix). Oct 1943. 7 p. Price: Microfilm-$1.00 - Photostat-$1.00
Investigation is made of the energy which is lost from a cylindrical ionisation chamber by the escape of scattered protons before all their energy has been absorbed. The total energy absorbed in the cylinder is found. An appendix gives the number of protons spending any given energy in the cylinder. Graphs are included.

PB L 87043. DAVISON, B. and FUCHS, K. The critical radius and the time constant of a sphere embedded in a spherical scattering container. (Gt Brit Dept of Atomic Energy BDDA 41; Rept MS 97). Nov 1943. 31 p. Price: Microfilm-$1.75 - Photostat-$4.00
The available data are presented for the critical radius and the time constant of the sphere. Further data are obtained on some limiting cases, such as small multiplication, very thin and very thick containers. Combining all these results the critical radius and time constant are found. A number of graphs are appended.

PB L 87044. DAVISON, B. Critical radius for a hemisphere with a one-sided infinite container. (Gt Brit Dept of Atomic Energy BDDA 42; Rept MS 100). Nov 1943. 9 p. Price: Microfilm-$1.00 - Photostat-$1.00
The problem is stated, general equations are supplied, together with treatment of a specific case. A graph is included. See also PB L 87056.

PB L 87045. KYNCH, G. J. Differential diffusion through a capillary. (Gt Brit Dept of Atomic Energy BDDA 43; Rept MS 103). Dec 1943. 8 p. Price: Microfilm-$1.00 - Photostat-$1.00
Details are worked out for the hydrodynamical flow ("streaming") through the straight capillary of uniform cross-section, ignoring the effects due to flow in at the entrance or out of the exit, in order to see how the results compared with experiments. The main results are listed.

PB L 87046. KINSEY, B. B. and COHEN, S. J. Measurement of the concentration of U235 in a sample of uranium oxide enriched in this isotope. (Gt Brit Dept of Atomic Energy BDDA 44; Rept BR 472). Dec 1943. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00
Measurements were made by comparison of the numbers of fissions produced by two thin layers of uranium oxide, placed back to back in two ionisation chambers, one sample containing ordinary uranium oxide, the other an oxide, enriched in U235. For these comparisons, two thin layers of the enriched sample were used and three ordinary layers, all of them prepared by Imperial Chemical Industries from a sample supplied

from the United States. The mean of six results gave 5.1 ± 0.1 for the ratio of U238 to U235, equivalent to a U235 content of 16.4 ± 0.3% of all the uranium present.

PB L 87047. BRODA, E. Barium 139 as fission indicator. (Gt Brit Dept of Atomic Energy BDDA 45; Rept BR 365). Dec 1943. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00
A technique has been worked out for measuring the fission density in a uranium containing medium in relative units by determining the amount of a suitable fission product formed. Generally a given fission product will be formed in natural uranium by slow neutron fission of U 235 or by fast neutron fission of either U 235 or U 238. It is intended to translate the relative units into absolute units by comparison of the Ba yield with the indication of a UF_6 fission chamber in the same medium.

PB L 87048. BRODA, E. Szilard-Chalmers effect in permanganate solutions. (Gt Brit Dept of Atomic Energy BDDA 46; Rept BR 379). Jan 1944. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00
The exchange of Mn between the 2, 4, and 7 valent states during and after irradiation of solutions with slow neutrons has been studied. After the dissipation of the recoil energy no exchange takes place between 7 valent and low valent Mn, but 2 and 4 valent Mn atoms exchange freely with each other. During irradiation of dilute permanganate solutions up to 95% of the activated nuclei are reduced to states of lower valancy. The yield in a given solution is well reproducible, as found before by Rotblat, and does not depend materially on details of procedure. The rest of the Mn^{56} remains in the 7 valent state. The fraction of the total activity found in low valent states decreases with concentration and is about 70% in concentrated solutions of $NaMnO_4$ as well as in solid $NaMnO_4$. The gain in activity (as compared with solid Mn detectors), which determines the accuracy of measurements of small neutron densities, has been estimated numerically.

PB L 87049. BRETSCHER, E. and others. A neutron standard. (Gt Brit Dept of Atomic Energy BDDA 47; Rept BR 383). Jan 1944. 9 p. Price: Microfilm-$1.00 - Photostat-$1.00
To calibrate an arbitrary radium-beryllium source it is desirable to have available a neutron standard which yields for a given amount of radium element a well defined number of neutrons. The absolute neutron efficiency of such a standard is of secondary importance as long as it remains constant. The preparation of such a standard substance is described, using a definite chemical compound containing the alpha-active body and Beryllium or Boron.

PB L 87050. BRETSCHER, E. and others. Determination of the number of neutrons emitted by a radium beryllium source. (Gt Brit Dept of Atomic Energy BDDA 48; Rept BR 382). Feb 1944. 8 p. Price: Microfilm-$1.00 - Photostat-$1.00
A comparison is made between the activities induced under suitable conditions in Manganese by a Radium-Beryllium source and by a D + D source. The total neutron emission of the D + D source is derived from ionisation chamber measurements. From these measurements the estimated strength of our source (0.5 g. Ra-Be) is 5.4×10^6 neutrons per second. In another report is described the method adopted in measuring the neutron flux from a heavy hydrogen target bombarded with deuterons. These measurements involve the use of an ionisation chamber and yield the absolute number $N(\varphi)$ of neutrons passing per second through 1 cm^2 placed at right-angles to the radius connecting the source and the center of the ionisation chamber. The total number of neutrons emitted by the source is then $2\pi r^2 \int_0^{\pi/2} N(\varphi) \sin\varphi \, d\varphi$. The object of the present experiment is to compare this integrated flux with the total emission from our standard Radium-Beryllium source. This is done by surrounding each source in turn by a tank containing Manganese sulphate in dilute aqueous solution. After irradiation for a known time the solution is thoroughly mixed and samples of Manganese Oxide prepared from it. The activities of these samples are then measured using Geiger counters. The value thus obtained for the strength of the Radium-Beryllium source is in substantial agreement with previous determinations of it by other workers, and provides practical justification for the method adopted.

PB L 87051. WILSON, A. H. Effect of small departures from the spherical shape upon the critical size and time constant of a sphere. (Gt Brit Dept of Atomic Energy BDDA 49; Rept MS 109). Mar 1944. 8 p. Price: Microfilm-$1.00-Photostat-$1.00
One of the most important problems connected with bodies containing fissionable matter is the effect of the shape of the body upon the chain reaction. One simple case which has not so far been treated is when the body is nearly spherical. This case can be treated by various approximate methods, and the present report is concerned with the simplest of these, namely the diffusion method.

PB L 87052. CLARK, F. L. and others. Alpha-ray analysis of X-isotopes. Part I. Apparatus. (Gt Brit Dept of Atomic Energy BDDA 50; Rept BR 431). May 1944. 30 p. Price: Microfilm-$1.50 - Photostat-$3.00
A description is given of an apparatus designed by O. R. Frisch for the determination of the relative proportions of the numbers of α-particles of different kinetic energies emitted by a sample of radioactive substance. It was primarily constructed to determine the proportion of X_{234} and X_{238} in samples of X compounds which had been subjected to a process of isotopic separation. Much experimental work has been carried out with the object of improving the performance of the apparatus, and it is now possible to count separately the α-particle flux from X_{235} in natural X with a fair degree of accuracy. So far as we are aware, this is the first time such a degree of resolution of the flux from natural X has been achieved by an α-particle counting apparatus. Most of the improvements have been due to stabilisation of power supplies, and it is now possible to make rapid determinations of high statistical accuracy because the apparatus can be left unattended overnight with no serious drift. Determinations of the mean range and activity of α-particles from X_{235} in material of normal isotopic composition have been made with the apparatus. In addition, α-ray analyses of enriched samples of X have been carried out. This section of the work will be described in a later report. Diagrams and microphotographs are included.

PB L 87053. WILKINSON, D. H. Tests concerning the reproducibility of the $RaBeF_4$ neutron standard and its calibration as a source of neutrons. (Gt Brit Dept of Atomic Energy BDDA 51; Rept Br 515). Jun 1944. 19 p. Price: Microfilm-$1.25 - Photostat-$2.00
The $RaBeF_4$ neutron standard is found to be reproducible to within the limits of experimental error (better than 0.5%). Its yield in neutrons per second per gram is found to be $(1.84 \pm 0.07) \times 10^6$. A simple technique for the calibration of Ra + Be neutron sources is described. Diagrams and graphs are appended.

PB L 87054. FAIRBROTHER, H. The critical size and time constant of a spheroid. (Gt Brit Dept of Atomic Energy BDDA 52; Rept MS 111). Jun 1944. 24 p. Price: Microfilm-$1.50 - Photostat-$3.00
The main object of the present report is to determine the critical size and time constant of a spheroid of uranium completely surrounded by an infinite container with the same free path. When the central uranium mass is spherical there are various methods available for solving the problem, but, for more general shapes, only the diffusion theory can be used without encountering very complicated mathematics, and the diffusion theory is therefor used in this report. As a preliminary to the discussion of the spheroid in the infinite container, the solution is given for the much simpler problem of a bare spheroid when the boundary condition is assumed to be that the density vanishes at the surface of the spheroid. Sections 1, 2 and 3 are concerned with the formulation of the problem and with the results of the calculations, while the detailed calculations are given in sections 4, 5 and 6.

PB L 87055. KINSEY, B. B. and COHEN, S. G. Energy spectrum of the neutrons from the lithium (p,n) reaction. (Gt Brit Dept of Atomic Energy BDDA 53; Rept BR 452). Jun 1944. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00
Using the photographic plate method, energy measurements have been made on the neutrons emitted in the Li7 (p,n) reaction. The results show that the Q value for this reaction is single-valued for protons with energies up to 4.0 MeV. Graphs are included.

PB L 87056. PRESTON, P. D. and DAVISON, B. Critical radius of a hemisphere completely surrounded by a container. (Gt Brit Dept of Atomic Energy BDDA 54; Rept MS 112). Jul 1944. 12 p. Price: Microfilm-$1.25 - Photostat-$2.00
In another report (PB L 87044, Rept MS 100), the critical radius for a hemisphere, covered by a container over its curved surface, is determined. This covered a method of assembly wherein two hemispheres each covered by a container over its curved surface are initially situated in such a position that their plane boundaries are bare. In this report the calculations are extended to cover an assembly where the plane boundary of each hemisphere is covered by the plane boundary of the container of the other hemisphere.

PB L 87057. WILSON, A. H. The effect of anisotropic scattering on the multiplication in a sphere. (Gt Brit Dept of Atomic Energy BDDA 55; Rept MS 113). Jul 1944. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00
The report deals with the problem of determining the neutron distribution in bodies containing fissionable matter when all the neutrons are supposed to have the same velocity. The scattering is not assumed to be isotropic, but inelastic scattering is neglected.

PB L 87058. FEATHER, N. Note on the investigation of spatial asymmetry in fast neutron fission, using a double ionisation chamber and pulse analyser, and its possible cross-sections at high energies. (Gt Brit Dept of Atomic Energy BDDA 56; Rept BR 495). Jul 1944. 9 p. Price: Microfilm-$1.00 - Photostat-$1.00
The present note is concerned mainly with a discussion of the significance of the results that may be obtained from an investigation of spatial asymmetry.

PB L 87059. BRODA, E. Iodine 131 and 133 as fission indicators. (Gt Brit Dept of Atomic Energy BDDA 57; Rept BR 506). Sep 1944. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00
It appears that both I 131 and I 133 are suitable fission indicators where Ba cannot be used. Chemical procedure and results are given.

PB L 87060. FEATHER, N. On a possible method of investigating the back-scattering of α-particles under conditions of "50 per cent geometry." (Gt Brit Dept of Atomic Energy BDDA 58; Rept BR 519). Sep 1944. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
An experiment is described by which the effect of the contribution of back-scattered α-particles to the counting rate may be studied directly.

PB L 87061. FEATHER, N. On the distribution of pulse sizes in a parallel-plate ionisation chamber containing a thick layer of hydrogen-rich material irradiated neutrons (II): effect of oblique incidence. (Gt Brit Dept of Atomic Energy BDDA 59; Rept BR 513). Oct 1944. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00
The report examines the problem of oblique incidence of neutrons on the layer - at least for small angles of obliquity, and confining consideration to the special case of the Geiger law $R \propto E^{3/2}$. It is a continuation of PB L 87062.

PB L 87062. FEATHER, N. On the distribution of pulse sizes in a parallel-plate ionization chamber containing a thick layer of hydrogen-rich material irradiated with a parallel beam of neutrons. (Gt Brit Dept of Atomic Energy BDDA 60; Rept BR 512). Sep 1944. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00
An expression is obtained for the distribution of pulse sizes due to the protons projected from a thick layer of hydrogen-rich material by a parallel beam of monokinetic neutrons incident normally on the layer. This expression was applied to a hypothetical case in which the range-energy relation for protons in the larger material was assumed to be the Geiger relation $R \propto E^{3/2}$. For part 2, see PB L 87061.

PB L 87063. SMALES, A. A. A rapid colorimetric method for the determination of T in solutions of TO_2F_2 + HF, by means of hydrogen peroxide. (Gt Brit Dept of Atomic Energy BDDA 61; Rept BR 526). Nov 1944. 7 p. Price: Microfilm-$1.00 - Photostat-$1.00
The color given when H_2O_2 is added to ammonium carbonate solution containing T has been developed as a photometric method for rapid determination of T in TO_2F_2 - HF solutions, using a Spekker absorptiometer with Hg lamp and filters chance No. 6 + Wratten No. 50 to give a wavelength of 436 mμ. The method has a wide range, i.e. from a lower limit of, say, 0.2 mgm. up to 25mgm, and of course by taking aliquots, quite large amounts of T may be dealt with. Sulphate, nitrate, chloride, phosphate and fluoride have been shown not to affect the accuracy of the method when present in moderate excess. The interfering effects of heavy metal ions have been studied and although small quantities of some could be tolerated it is preferable to remove them. The method is chiefly of value for uncontaminated TO_2F_2-HF solutions but there seems no reason why it could not be used in other cases for a rapid finish after the separation of T from other metals.

PB L 87064. FEATHER, N. Chance coincidences between non-random sequences, with particular reference to experiments using a cyclotron source. (Gt Brit Dept of Atomic Energy BDDA 62; Rept BR 555) Jan 1945. 23 p. Price: Microfilm-$1.50 - Photostat-$3.00
If N_1, N_2 are the mean counting rates in two counters, the impulses from which are fed to a coincidence circuit characterized by a constant 'coincidence resolving-time' τ, the most probable number of chance coincidences recorded in a time T is given by the expression $2N_1N_2\tau T$, if certain conditions are satisfied. The most important of these conditions is that the impulses in each counter shall constitute a random sequence. When this condition is not satisfied, the number of chance coincidences may still be calculated so long as the probability of the occurrence of an impulse in each counter is given as an explicit function of the time. An appendix discusses the Poisson formula in relation to non-random sequences.

PB L 87065. PEISER, H. S. and ALCOCK, T. C. X-ray powder patterns of some X metal compounds. (Gt Brit Dept of Atomic Energy BDDA 63; Rept BR 589). Mar 1945. 8 p. Price: Microfilm-$1.00 - Photostat-$1.00
The X-ray powder patterns of the following compounds have been recorded for future reference: I ... XC; II ... XCl_4; III ... XF_3; IV ... XF_4; V ... XFN?; VI ... XO_3; VII ... X_3O_8; VIII - XI ... XO_2F_2. The structure of XC is discussed and a new value for the metallic radius of X atoms is given. Tables are included.

PB L 87066. BRODA, E. and WRIGHT, P. K. Upper limits of the fission cross-sections of lead and bismuth for Li-D neutrons. (Gt Brit Dept of Atomic Energy BDDA 64; Rept BR 603a). Apr 1945. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00
Experimental results are reported on fissions of the readily available elements 82 and 83 on irradiation with Li-D neutrons.

PB L 87067. WILKINSON, D. H. The range/energy relation for α-particles of 0-5.3 MeV. in ethylene and polythene. (Gt Brit Dept of Atomic Energy BDDA 65; Rept BR 639). May 1945. 14 p. Price: Microfilm-$1.25 - Photostat-$2.00
Some methods of measuring a flux of fast neutrons depend on the counting of protons projected by the neutrons from a layer of hydrogen-rich material. Polythene is often the material employed as it has a high hydrogen content. If other than 'thin' films are used it is necessary to know the range/energy relation for protons in polythene. This is difficult to determine directly, but we may investigate the relation for α-particles and assume the stopping power relative to air for protons and α-particles to be the same for particles of the same velocity. Stopping power data are most needed for protons of energy 0 - 1 MeV, so investigation with Po α-particles effectively covers this range. Graphs are included.

PB L 87068. LIVESEY, D. L. and WILKINSON, D. H. A photographic plate study of neutrons from the D-D reaction. (Gt Brit Dept of Atomic Energy BDDA 66; Rept BR 638) May 1945. 30 p. Price: Microfilm-$1.50 - Photostat-$3.00

Physics, Nuclear (contd)

The photographic plate technique has been used to investigate three features of the DD neutron producing reaction - (i) the Q value which is found to be (3.23 ± 0.03) Mev. agreeing with a re-treated previous precision determination, (ii) the shape of the neutron spectra at eight angles from 0 to 150°, (iii) the angular distribution of the flux which, on transformation to C.G. space is found approximately to fit a $1 + A \cos^2 \theta$ relation, though with possible systematic departures. We find, incidentally, some justification for our initial assumptions concerning the identity of the stopping power of photographic emulsion for α-particles and protons. The general conclusion reached would seem to be that the photographic plate technique is capable of precise determination of neutron energy in the range 2 - 4 Mev. here covered. Graphs are appended.

PB L 87069. KYNCH, G. J. Differential diffusion through a capillary. (Pt.1. mathematical). (Gt Brit Dept of Atomic Energy BDDA 67; Rept MS 118). Jun 1945. 18 p. Price: Microfilm-$1.25 - Photostat-$2.00

This report attempts to give physical content to the assumption of the theory due to Present that the total flow is the sum of the "molecular" and "viscous" flows. A momentum transport equation is used. The main assumption is that momentum is lost to the walls by the molecules which is a fraction of their average momentum along the tube. A similar assumption may be made for a mixture of gases, different mean free paths being used for the separate components, if necessary. No attempt has been made to obtain the velocity distribution function which is necessary before a complete theory can be developed. This report is entirely mathematical. The results and a preliminary comparison with experiment are given in part 2 (PB L 87072).

PB L 87001. GREAT BRITAIN. MINISTRY OF SUPPLY. DEPARTMENT OF ATOMIC ENERGY. Atomic energy reports BDDA 68-73. (Microfilm reel, Frames 766-858). 1945-1946. 104 f. Price: Microfilm-$3.50 - Enlargement Print-$12.00

Abstracts of the individual reports on this reel, which are available separately, are given below (PB L 87070-PB L 87075). Crown copyright is reserved for each report.

PB L 87070. BRODA, E. and FEATHER, N. Assignment of the slow-neutron-produced activities of thallium and the dual disintegration radium E. (Gt Brit Dept of Atomic Energy BDDA 68; Rept BR 615). Jun 1945. 20 p. Price: Microfilm-$1.25 - Photostat-$2.00

Irradiation of thallium by slow neutrons as well as its transformation in the (d,p) reaction, leads to the production of β-activities of half-value periods 4.2 min. and 3.5 years. It has generally been assumed that the 4.2 min. activity is to be attributed to ^{204}Tl and the activity of 3.5 years half-value period to ^{206}Tl. This note attempts to show that the matter may be further investigated from a different starting point, and describes some experiments in which it was possible for ^{206}Tl but not ^{204}Tl to be produced. It is concluded that the short-period activity definitely belongs to the heavier, and the long-period activity presumably to the latter, of the two thallium isotopes in question. Briefly the new experimental approach is by way of a close re-investigation of the natural radioactivity of radium E ($^{210}_{83}$). Tables and a graph are included.

PB L 87071. BRODA, E. and WRIGHT, P. K. Preparation of a strong thin polonium source and preliminary experiments on the yield of (α,n) reactions. (Gt Brit Dept of Atomic Energy BDDA 69; Rept BR 641). Jul 1945. 11 p. Price: Microfilm-$1.25 - Photostat-$2.00

The object of this investigation was to work out a method of preparing strong polonium sources which can be used for the study of (α,n) reactions induced by alpha rays of well-defined energy. Cathodic deposition of Po was used on a Pt anode. Details of the procedure are given. Appendix contains tables.

PB L 87072. KYNCH, G. J. Differential diffusion through a capillary, Part II. (Gt. Brit Dept of Atomic Energy BDDA 70; Rept MS 119). Aug 1945. 26 p. Price: Microfilm-$1.50 - Photostat-$3.00

Part I of this report, which is listed as PB L 87069, formulates a theory of diffusion which includes the so-called "size effect." This is developed further in this part and numerical values are given enabling the use of the formulae. In addition the separation of an N_2-CO_2 mixture has been investigated using this method, and it is found to explain small discrepancies, mainly in the back-pressure curves. The relation between the separation of different mixtures by the same capillary is also discussed briefly. Tables and graphs are included.

PB L 87073. ALLEN, K. W. Measurement of a flux of fast neutrons with a counting pressure ionization chamber. (Gt Brit Dept of Atomic Energy BDDA 71; Rept BR 93). Oct 1945. 19 p. Price: Microfilm-$1.25 - Photostat-$2.00

In the method described here, the energy distribution of proton recoil in a hydrogen filled ionization chamber is determined, and the total number of such recoiling particles is counted. When the neutron spectrum is simple and accurately known, the incident fast neutron flux may be determined in terms of the neutron-proton scattering cross-section, even when the range of the recoil protons of maximum energy is of the same order as the dimensions of the ionization chamber. In this report, neutron flux measurements in the energy range 2 to 3 MV are described as illustrative of the general method. A diagram and graphs are included.

PB L 87074. BRODA, E. Application of the photographic plate to the quantitative determination of activities by track counts. (Gt Brit Dept of Atomic Energy BDDA 72; Rept BR 729). Aug 1946. 12 p. Price: Microfilm-$1.25 - Photostat-$2.00

Advantages of the track counting method using photographic plates over electrical counting methods as applied to heavy particles are listed as: Absence of background; production of a permanent record; possibility of prolonged exposure; and simplicity and cheapness. Against this the main disadvantage is the tediousness of the microscopic inspection of large areas of photographic plates. The numerical efficiency of the track count method is discussed with the aid of two examples.

PB L 87075. BRITISH NON-FERROUS METALS RESEARCH ASSOCIATION. Permeability of metals to argon and helium. (Gt Brit Dept of Atomic Energy BDDA 73; Rept BI 101). Oct 1946. 7 p. Price: Microfilm-$1.00 - Photostat-$1.00

It is accepted that for diffusion to occur in a gas-metal system there must be both adsorption and solution of the gas by the metal. There is no evidence in the literature that either of these phenomena occurs with the inert gas in the unexcited state. The present experiments were designed to cover the diffusion of argon through stainless steel and mild steel at 1000° C, and argon and helium through commercially pure aluminum at 500° C. Apparatus, materials, and procedure are described, and results are tabulated. Diagrams of apparatus are included.

PB L 87002. GREAT BRITAIN. MINISTRY OF SUPPLY. DEPARTMENT OF ATOMIC ENERGY. Atomic energy reports BDDA 74-98. (Microfilm reel, Frames not numbered consecutively). 1942-1947. 267 f. Price: Microfilm-$7.00 - Enlargement Print-$28.00

Abstracts are given below for the individual reports on this reel (PB L 87076-PB L 87100). Each report is available separately. Crown copyright is reserved for each report. (BDDA Reports 1-73 are contained in PB L 87000 and PB L 87001 above; and are listed individually as PB L 87003-PB L 87075).

PB L 87076. THOMPSON, J. W. Experimental work on fluorine production to May 1939. (Gt Brit Dept of Atomic Energy BDDA 74; Rept BR 195). n. d. 16 p. Price: Microfilm-$1.25 - Photostat-$2.00

An account is given of the four cells so far assembled for the production of fluorine, and of vapor pressure measurements to find the most suitable electrolyte. The first cell

was of copper and electrolyzed molten KHF_2, but no appreciable amount of fluorine was produced. The second was an iron cell with an iron diaphragm separating the fluorine and hydrogen compartments. The diaphragm, the top of the cell and the anode, were welded together so that the diaphragm should have become anodically passive and so insulated. The electrolyte was liquid, anhydrous HF containing KHF_2. Fluorine was produced, but the passivity of the diaphragm was erratic. A small copper cell was then assembled with the diaphragm and electrodes insulated from each other. This cell was satisfactory and a larger cell with an insulated diaphragm was then put into operation. A design for a still larger cell is suggested. Diagrams and a graph are included.

PB L 87077. HAWORTH, W. N. Investigations on oxides of I. (Gt Brit Dept of Atomic Energy BDDA 75; Rept BR 50). n. d. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00
Brief accounts are given of: (1) Analysis of residues from black I oxide, remaining after treatment with nitric acid; (2) suspensions of oxides in aqueous solution; and (3) preparation of I_3O_8.

PB L 87078. FEATHER, N. New method of investigating the angular distribution of high-energy neutrons scattered by protons. (Gt Brit Dept of Atomic Energy BDDA 76; Rept BR 257). Mar 1942. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00
Since neither the "direct" nor the "indirect" method is applicable over the whole range of ϕ (or Θ), fairly full information can be obtained only (1) by a combination of relative determinations by each of the two methods separately, or (2) by combining absolute determinations of "differential" cross sections, over the limited angular domain capable of study by one or other method, with a measurement of the total scattering cross section, as deduced from standard "absorption" experiments.

PB L 87079. FERGUSON, J. Preparation of fluorine. (Gt Brit Dept of Atomic Energy BDDA 77; Rept BR 37). May 1942. 17 p. Price: Microfilm-$1.25 - Photostat-$2.00
The reasons for the relative difficulty of preparing fluorine are outlined. The only practicable method appears to be the electrolysis of fluorides ionised by solution in anhydrous hydrofluoric acid. HF solutions of potassium fluoride appear to be the most suitable. The chief difficulty in preparing fluorine by this route is the heavy anode corrosion. This is greatest in dilute KF solutions. It also increases as the temperature is raised, though in some cases polarisation masks the effect of temperature. The minimum temperature of operation for any given KF/HF mixture is determined by the melting point of the mixture, so that the more concentrated KF solutions can be used only at raised temperatures.
The combined effects of temperature and KF concentration appear, according to the literature, to yield minimum corrosion at an electrolyte composition of KF.2HF or KF.3HF, and at temperatures lying between 70° C and 100° C. Either nickel or graphite can be used as anodes under such conditions, but nickel is stated to have the advantages of smoother operation and of yielding a gas free from carbon fluorides. The nickel consumption is stated to be less than 0.05 grams per gram of fluorine made, as compared with 1.1 grams per gram, in "low temperature" cells of electrolyte composition KF.4HF. References and graphs are appended.

PB L 87080. FERMING, F. W. and SELIGMAN, H. Capture cross-sections of N, Mg, S, Ca and Pb. (Gt Brit Dept of Atomic Energy BDDA 78; Rept BR 72). Nov 1942. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00
The fundamental principles of using a two medium system with neutron source at the center and integrating the density distribution of thermal neutrons throughout that system, in order to study the capture cross-sections of elements present, have been described in previous papers. Here we have applied that system to a sphere of 45 cms radius surrounded by paraffin wax, the contents of the sphere being substances suitable for enabling a determination of the capture cross-sections of Nitrogen, Magnesium, Calcium, Lead and Sulphur, relative to that of Hydrogen.

PB L 87081. FEATHER, N. Note on the inelastic scattering of fast neutrons. (Gt Brit Dept of Atomic Energy BDDA 79; Rept BR 89). Oct 1942. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00
In the inelastic scattering of charged particles by nuclei a considerable amount of evidence is now available to show that the loss of energy on scattering is accurately given by one of the characteristic excitation energies of the scattering nucleus. The object of the present report is to examine whether there is any correlation between present knowledge concerning nuclear excited states and that concerning the inelastic scattering of neutrons, on the general assumption that conclusions, drawn from experiments on the inelastic scattering of charged particles, are valid for neutrons also.

PB L 87082. FEATHER, N. Neutron-produced radioactivity in relation to the detection of high-energy neutrons; Maximum sensitivity of a counter. (Gt Brit Dept of Atomic Energy BDDA 80; Rept BR 310). Nov 1942. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00
The available copy of this report is in large part badly blurred and will not reproduce well.

PB L 87083. PEIERLS, R. Equilibrium time in a separation plant. (Gt Brit Dept of Atomic Energy BDDA 81; Rept MS 13). n. d. 11 p. Price: Microfilm-$1.25 - Photostat-$2.00
Mathematical theory and discussion of the subject are given. An appendix is concerned with derivation of equation (1) for a plant of the cascade type.

PB L 87084. PEIERLS, R. Effect of a stationary layer of thickness b in front of the diffusing membrane. (Gt Brit Dept of Atomic Energy BDDA 82; Rept MS 15). n. d. 1 p. Price: Microfilm-$1.00 - Photostat-$1.00
Solution is undertaken of the equation of diffusion under the condition cited.

PB L 87085. PEIERLS, R. Separating effect of passage through capillary. (Gt Brit Dept of Atomic Energy BDDA 83; Rept MS 17). n. d. 3 p. Price: Microfilm-$1.00-Photostat-$1.00
Mathematical equations are presented in this discussion.

PB L 87086. FUCHS, K. Effect of boundary layer for swept membranes. (Gt Brit Dept of Atomic Energy BDDA 84; Rept MS 21). n. d. 13 p. Price: Microfilm-$1.25 - Photostat-$2.00
The mixing by diffusion in the Simon apparatus was studied in another report on the assumption that the circulating gas retains its full velocity right up to the wall of the impeller chamber. To allow for the boundary layer, Peierls (in MS 15, PB L 87084) had worked out the effect of a stationary layer, neglecting thus the gradual rise of velocity across the layer. The author has succeeded in solving the problem for a particular form of velocity distribution, which is $u = u_0(1 - e^{-\beta s})$ where the constant β is defined by the fact that $1/\beta$ is the distance from the wall at which the velocity reaches $1-1/e$ or .63 of its maximum value. In order to estimate the thickness of the boundary layer for a given plant, it should be remembered that at the end of a rotor vane the boundary layer will just fill the clearance between the vane and the wall. To the rear of the vane, it will grow. This calculation neglects the effect of mixing by turbulence.

PB L 87087. PEIERLS, R. Clusius-Dickel device as gland. (Gt Brit Dept of Atomic Energy BDDA 85; Rept MS 39). n. d. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00
According to a suggestion by Fleischmann in Naturwissenschaften, one may use a thermal diffusion column to separate, say, helium, from a heavy gas in order to prevent the latter from reaching gauges or other parts liable to chemical attack. One might try to utilize this device to replace labyrinth glands at the ends of the shaft in the separator, by letting the

impeller chamber end in a thin space between two parallel plates at right angles to the shaft. However, calculations show that this is not the case and that the device is therefore of no practical interest.

PB L 87088. PRYCE, M. H. L. Critical conditions in neutron multiplication. (Gt Brit Dept of Atomic Energy BDDA 86; Rept MS.P 2A). n. d. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00

An extension is made of Peierls' theory of nuclear chain reactions arising from neutron multiplication, in particular, to make a more accurate calculation of conditions when the multiplication factor is neither very large nor very nearly unity. A graph is attached.

PB L 87089. FUCHS, K. Effect of a scattering container on the critical radius and time constant. (Gt Brit Dept of Atomic Energy BDDA 87; Rept MS 85). n. d. 30 p. Price: Microfilm-$1.50 - Photostat-$3.00

The report considers the critical radius and the time constant of a chain reaction in a sphere surrounded by a spherical container. The mean free path is assumed to be the same in the sphere and the container. For some purposees it is also assumed that the container only scatters, but does not absorb or create neutrons. The problem is attacked by means of the integral equation for the neutron density. A large number of representative cases in the region which is likely to be of practical interest are treated first. An analysis of the results show that they can be represented by means of an empirical formula. Equations and graphs are included.

PB L 87090. HAWORTH, W. N. Preparation of metallic X by electrolysis of the fused salts. (Gt Brit Dept of Atomic Energy BDDA 88; Rept BR 106). n. d. 2 p. Price: Microfilm-$1.00 - Photostat-$1.00

The metal can be obtained by the electrolysis of KXF_5, or $NaXF_5$ or XCl_4. The process is briefly described, together with that of fusion of the crude metallic powder in the induction furnace.

PB L 87091. HAWORTH, W. N. The "Metalectric" furnace. (Gt Brit Dept of Atomic Energy BDDA 89; Rept BR 199). n. d. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00

The experimental electric furnace consists of a steel drum about 3 feet high and 5 feet in diameter, suitably mounted on asbestos. Into the sides of the drum project three equally spaced graphite electrodes with pointed tips. Three-phase alternating current is supplied, and a temperature of 2000° C is attainable in a little over an hour's run. A sketch is attached.

PB L 87092. FRIEDLANDER, F. G. Note on the compression at the diffuser entry in compressor I.Z.I. (Gt Brit Dept of Atomic Energy BDDA 90; Rept MS 88). n. d. 10 p. Price: Microfilm-$1.00 - Photostat-$1.00

The method, based on the "momentum theory," of estimating the "shock loss" in a suddenly expanding pipe can also be applied to the sudden change in direction which the diffuser of a centrifugal compressor imposes, in general, on the gas flow leaving the impeller. However, the conditions which must be assumed at the diffuser entrance amount to a drastic and somewhat arbitrary simplification of the flow there. In fact these assumptions do not approximate the actual flow even approximately when the quantity of gas entering the diffuser is either very small or very large. For intermediate flows, their validity could only be established experimentally, and in the absence of sufficient relevant evidence of this kind the theory developed in this report must be considered as a tentative suggestion rather than as a mathematical representation of the actual effect of the diffuser entrance on the gas flow. Graphs are included.

PB L 87093. BOOKER, D. V. and others. Density of resonance neutrons in hydrogenous media near the source. (Gt Brit Dept of Atomic Energy BDDA 91; Rept BR 393). Jan 1944. 22 p. Price: Microfilm-$1.50 - Photostat-$3.00

Neutron-absorbing properties of a medium sometimes cannot be studied by the usual density integration technique because the amount of medium, or the intensity far from the source, is insufficient. In such cases many useful deductions can be made from single-point activation measurements in a limited amount of medium, carried out in parallel with similar measurements in a medium of known behavior provided the differences between the scattering properties of the two media are negligible, insofar as they influence the observed activations, or can be allowed for. The relevant properties of a hydrogenous medium are discussed under four headings: (a) absolute concentration of slowing-down nuclei, mainly hydrogen; (b) concentration of other scattering nuclei; (c) slowing-down length as affecting the effective distance between the source and the detector; (d) the same length, as affecting the loss of neutrons due to the limited size of the system. Simple measurements show that in the particular geometry used, the effect due to the case "d" is small and can be accounted for by a simple correction. The effect "c" is studied by measurements at a fixed distance in media of various hydrogen concentration. The effect "a" is easy to calculate from the chemical composition of the medium. The effect "b" can be deduced in some selected cases from activation data after the corrections for all other effects have been applied. In this way it is possible to devise a rational procedure for finding a reference medium of known scattering properties to match any given medium whose absorbing properties it is proposed to study and for applying corrections made necessary by the unavoidable imperfections of this matching.

PB L 87094. CRANSHAW, T. E. Receiving time and counting errors in discriminators and scaling units. (Gt Brit Dept of Atomic Energy BDDA 92; BR 448). Jan 1944. 17 p. Price: Microfilm-$1.25 - Photostat-$2.00

The latest form of discriminators and scaling units as used in the Cavendish Laboratory are described here. Measurements have been made to test the performance of these devices and a special test apparatus built. In counting pulses, distributed at random in time, there are two sources of error: (1) Two or more pulses occurring within a time interval which is a characteristic constant of the counting apparatus, will be counted as one; (2) if the signal/noise ratio is low, the counting apparatus may give an incorrect result, due to the superposition of noise on the pulses to be counted. With regard to (1), the counting losses have been calculated as a function of the counting rate, for the circuits discussed in this paper. With regard to (2), a special discriminator has been tested in which the noise effect has been completely eliminated. The losses due to the discriminator and first pair of the scaling unit, correspond to a time constant of some 20 microseconds; the maximum counting meter and its circuits and limits the maximum rate to 25,000 per minute. Diagrams and graphs are included.

PB L 87095. KOWARSKI, L. and WEST D. Distribution of slow neutrons in rarefied hydrogenous media. (Gt Brit Dept of Atomic Energy BDDA 93; Rept BR 391). Feb 1944. 25 p. Price: Microfilm-$1.50 - Photostat-$3.00

Past investigations of the absorption of neutrons in various media often relied on the determination of the density integrals S_{int} and S_{ext}, respectively inside and outside a spherical container filled with the investigated medium and surrounded by a reference medium such as water; S_{ref} being a similar outside integral taken when the container was empty, the expression $(S_{ref}-S_{ext})/S_{int}$ should be equal to the ratio of mean lives in the two media. The authors suggest that discrepancies, disclosed in the past by this kind of check, were mainly due to errors in the determination of S_{int}/S_{ref}, errors which could be avoided by reducing as far as practicable the presence of foreign matter (such as metal or air) in the immediate vicinity of the detector which, moreover, should be as thin as possible if thermal neutrons are involved. An improved technique, using neutron-thin Mn detectors for thermal measurements and Cd-screened neutron-thick Ir detectors for resonance measurements is described. Distribution curves $IR^2 = f(R)$ obtained with these detectors in water and in powdered polymethylmethacrylate ("Diakon") are given and discussed; considerable attention is given to the question of the extrapolation at great distances from the source. After the determination of S_{int}/S_{ref} in two-medium systems has been made securely accurate, the next question is to

see whether S_{ref} should be determined outside an empty sphere surrounding the source, or in a continuous medium in which the source is directly immersed. The effect of strongly absorbing bodies present in or on the empty sphere is discussed and direct measurements show that the presence of such a body, even far from the detectors, can (and in some past experiments, did) reduce the observed value of S_{ref} by a few percent; since no similar reduction takes place when the sphere is full (S_{ext} measurements), such errors may affect to an appreciable extent expressions of the $(S_{ref}-S_{ext})/S_{int}$ type. The results of both sets of experiments described above lay some of the essential foundations for a satisfactory technique of neutron density measurements in two-medium systems.

PB L 87096. JONES, A. G. The determination of X in urine. A proposed modification and some notes on the method. (Gt Brit Dept of Atomic Energy BDDA 94; Rept BR 469). Aug 1944. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
It is proposed that 5 ml. urine should be evaporated and fused in small silver dishes, 3 cm. in diameter. Using such dishes, 0.1 μg. X can be detected which means that the sensitivity of this test is the same as in the present method. The modified method is very rapid and it should make it possible to meet the heavy increase in the number of samples required to be examined in the near future. Notes are included on the removal of red fluorescence and the effect of niobium and tantalum on the test.

PB L 87097. WILSON, A. H. A new method of determining the time constant of a sphere in a container. (Gt Brit Dept of Atomic Energy BDDA 95; Rept MS 115). Aug 1944. 9 p. Price: Microfilm-$1.00 - Photostat-$1.00
All the methods that have so far been used to determine the critical size and time constant of a uniform sphere of uranium give approximately the same numerical results, but there are still unexplained discrepancies in the numerical results for the time constant of a sphere in a container. One method of obtaining these results is indicated in MS 89 (PB L 87037). It consists in evaluating the variation integral for the eigenvalue of the problem using the eigenfunction given by diffusion theory, thus avoiding the necessity of knowing the boundary conditions to be used in conjunction with the diffusion theory. This method involves the use of the exponential integral with complex argument, tables of which are now available.

PB L 87098. BRODA, E. and WRIGHT, P. K. Extraction of protoactinium from a siliceous raw material. (Gt Brit Dept of Atomic Energy BDDA 96; Rept BI 68). Mar 1946. 3 p. Price: Microfilm-$1.00 - Photostat-$1.00
The raw material is a sandy residue of high silica content obtained in the production of U compounds from Canadian pitchblende. The object of the investigation was to find an industrial method for the extraction of Pa. In this report the isolation of Pa on Zr carrier is described.

PB L 87099. FUCHS, K. and PEIERLS, R. Separation of isotopes. (Gt Brit Dept of Atomic Energy BDDA 97; Rept MS 12A). n. d. 15 p. Price: Microfilm-$1.25 - Photostat-$2.00
The process of separating isotopes may be considered as removing the disorder caused by mixing them, or in other words reducing the entropy of mixing. The following topics are treated: Separation potential; the connections in a cascade plant; the case of many fractions; and efficiency of various methods of separation.

PB L 87100. WALSH, A. The spectrographic analysis of uranium. (Gt Brit Dept of Atomic Energy BDDA 98; Rept BR 732A). Mar 1947. 16 p. Price: Microfilm-$1.25 - Photostat-$2.00
A tentative method for the spectrographic determination of impurities in uranium has been developed and an estimate made of the degree of accuracy and sensitivity obtainable. All the quantitative data so far available are limited to the determination of iron, silicon, manganese, copper and nickel, but it is anticipated that the technique described will be applicable to other impurities. Suggestions are made for further improvement of the method. Tables, diagrams and graphs are included. A research project of the British Non-ferrous Metals Research Association.

PB L 86468. GRUMMITT, W. E. and WILKINSON, G. Fission products of U 235. (Natl Res Council of Canada. Atomic Energy Rept 1630) n. d. 1 p. Price: Microfilm-$1.00 - Photostat-$1.00
In a graph, the logarithm of the fission yield is plotted against the mass number of the fission isotope. In addition to the present results, fission yields for krypton and xenon isotopes of masses 83, 84, 86, 131, 132, 134 and 136 are included.

PB L 86773. MARK, C. Neutron density near a plane surface. (Canada. Natl Res Council Rept 1600). Oct 1947. 7 p. Price: Microfilm-$1.00 - Photostat-$1.00
The exact solution of Milne's integral equation is expressed as a real integral with non-oscillating integrand. This expression has been derived from the Wiener-Hopf solution for the Laplace transform of the density. The integrand involves the angular distribution of neutrons emerging from the surface, and the tabulation of this function by the Mathematical Tables Project given by Placzek has been used in the numerical evaluation of the integral. The values of the first three moments of the difference between the density and the asymptotic density, and an expansion of the density for points near the boundary are also given. Various authors have proposed or obtained approximations to the solution of this problem, and some of these approximations are referred to and compared with the exact solution. Reprinted from The physical review, Oct. 1, 1947.

PB L 86776. MAYNEORD, W. V. Therapeutic gamma ray sources. (Canada. Natl Res Council Rept 1595). Mar 1946. 22 p. Price: Microfilm-$1.50 - Photostat-$3.00
The report discusses certain physical aspects of radioactive therapeutic sources, particular attention being paid to Co^{60} and its possible use as a substitute for radium in therapeutic practice. The difficulties in the specification of amount of Co^{60} for therapeutic use are discussed. A strict definition in terms of curies or millicuries is not satisfactory for therapeutic practice. It is calculated that the dosage rate at 1 cm. from a point source of 1 millicurie of Co^{60} enclosed in a platinum envelope 0.5 mm. thick is 11.1 r. It follows that 1 millicurie of Co^{60} would be expected to be equivalent to 1.34 mg. radium. The cobalt source emits a smaller relative energy in the form of beta rays as compared to gamma rays than the corresponding radium source. The therapeutic significance of this is discussed. It is suggested that for interstitial treatment cobalt wire be inserted into stainless steel containers. Calculations of size and activities of wire to produce the required linear densities are given. The form of source for intracavitary and surface techniques are discussed, as well as some problems of telecurie therapy. Suggestions are made regarding therapeutic sources of cobalt wires approximately 1 mm. diameter electroplated with suitable materials to remove beta radiation. Important possibilities are opened up by a combination of fine cobalt wires, cobalt foils and plastic envelopes. The greatest disadvantage of cobalt sources will probably be the relatively short half life necessitating continual alterations in technique. It is emphasized that the calculations are tentative and that much experimental work both physical and biological must be carried out before the new sources are fit for clinical trials.

PB L 86469. MILLER, N. and MACPHERSON, E. Radiation chemistry analytical methods: Part I. Ferric iron. Part II. Hydrogen peroxide. (Natl Res Council of Canada. Atomic Energy Proj. CRC Rept 352; NRC Rept 1617). Sep 1947. 7 p. Price: Microfilm-$1.00 - Photostat-$1.00
A spectrophotometric method for estimation of ferric iron is described, based on the formation of the well-known ferrithiocyanate complex. The method is applicable down to concentrations of approximately 4×10^{-5} N in ferric ion. The color induced in solutions containing the Ti^{4+} ion by hydrogen peroxide, attributed to the formation of a yellow-colored pertitanate, has been applied to the spectrophotometric estimation of dilute peroxide solutions down to 5×10^{-5} N.

PB L 85710. TUNNICLIFFE, P. R. A proportional alpha counter for atmospheric dust filters. (Natl Res Council of Canada. Atomic Energy Proj. CRTec-Rept 329). Apr 1947. 9 p. Price: Microfilm-$1.00 - Photostat-$1.00
Contamination by alpha-emitting radioactive materials in the atmosphere may be concentrated and collected by drawing a large volume of air through a paper filter, or through an electrostatic precipitator. A proportional counter containing commercially pure methane at atmospheric pressure has been developed in the Radiation Meters Section of the N.R.C. Chalk River Laboratory, for measuring the activity of the filter or the precipitator tube. Proportional counting, especially with methane, is much more reliable for routine work of this type than ionization chamber counting of the alpha pulses because the relatively large voltage of the pulses delivered by the proportional counter minimises spurious effects due to microphonics and interference. The counter has a very low background, and is capable of counting alphas in the presence of a large number of betas. This latter property may often be important for this application. Graphs and diagrams are included.

PB L 86467. WALLACE, P. R. Lectures on theory of the solid state (with applications to graphite). (Natl Res Council of Canada. Atomic Energy Proj. LT-11). Aug 1946. 39 p. Price: Microfilm-$1.75 - Photostat-$4.00
The modern quantum mechanical theory of the properties of solid materials is surveyed. This will serve as a basis for predicting how some properties of various types of solids may be expected to be altered under the action of intense nuetron irradiation. The five classes of solids are listed and their properties classified under three headings: Volume properties; surface properties; and structure sensitive properties. These lectures are concerned mostly with volume properties. The topics are: Introduction; bands; the nature of the wave functions; Brillonin zones; "nearly free electron" approximation; reduced zone scheme; the tight binding approximation; motion of electrons; some properties of graphite; single hexagon layer; and energy bands and conductivity.

PBL 86466. WALLACE, P. R. Notes on Bristol Summer School in theory of the solid state. May 30 - Jun 6, 1946. (Natl Res Council of Canada. Atomic Energy Project MISC-3). Mar 1947. 33 p. Price: Microfilm-$1.75 - Photostat-$4.00
The series of lectures on which these notes are based were given by Professor N. F. Mott. The principal topics are: Ionic motion in solid; conduction in insulators; semi-conductors and contact rectification; phosphorescence; formation of protective oxide films on metals; and theory of photographic processes.

PB L 86774. YAFFE, L. Instruments and techniques used in radiochemistry. (Canada. Natl Res Council Rept 1608). Sept 1947. 6 p. Price: Microfilm-$1.00 - Photostat-$1.00
Reprinted from Canadian chemistry and process industries, Sep. 1947. Some general methods for the preparation of sources and details of measurement in the estimation of alpha, beta and gamma activities are described. The production and measurement of neutrons in a laboratory, as distinct from the pile, are also discussed. Two types of instruments are usually used; (1) the counter, which responds to individual pulses; and (2) integrating instruments.

PHYSIOLOGY

PB M 81601. CHADWICK, LEIGH E. Respiratory quotient of drosophila in flight. n. d. 22 p. Price: Microfilm-$1.50 - Photostat-$3.00
Continuous volumetric measurements of oxygen consumption and conductrimetric measurements of carbon dioxide production were made at 20° C. on individual specimens of Drosophila americana and D. virilis: (a) before flight; (b) during flight to exhaustion; and (c) after flight. During flight the rate of wing beat was determined stroboscopically. It is concluded that carbohydrate furnishes the principal and possibly the only source of energy for flight, and that Drosophila are able to survive for some hours after their carbohydrate has been exhausted. Med. Div., Edgewood Arsenal, Md.

PB M 87305. LAMPORT, HAROLD. Appraisal of the wounding power of missile fragments. (OSRD CMR Missile Casualties Rept 3) Dec 1944. 12 p. Price: Microfilm-$1.25 - Photostat-$2.00
The present status of the development of estimates of the wounding power of small fragments has been reviewed, with emphasis on a substitute for field casualty surveys. Throughout, the classical contributions of Burns and Zuckerman are acknowledged and utilized. Three types of investigation, aside from the surveys, were found indicated: (1) laboratory experimentation; (2) interviews, questionnaires, and official opinions concerning relevant facts on the battle field; and (3) mathematical analysis. The problems arising and the recommended manner of their elucidation are listed. Department of Physiology, Yale University, School of Medicine.

PB M 87719. LAMPORT, HAROLD. The military loss resulting from a casualty related to the days lost from active duty. (OSRD CMR Missile Casualties Rept 15) Sep 1945. 8 p. Price: Microfilm-$1.00 - Photostat-$1.00
Two methods, (1) the Logarithmic Law, (2) the Annuity Law, for obtaining a measure of the military loss resulting from a casualty of a given period of disability are developed and discussed. The investigators see little basis for choosing between them. Department of Physiology, Yale University, School of Medicine.

PB M 87720. LAMPORT, HAROLD and CONNOR, GERVASE. Survival (missile casualties) contracts OEMcmr-5602, 549. Bi-monthly progress report Nos. 1-3. May-Sep 1945. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00
A series of three bi-monthly progress reports covering preliminary studies on standard wounds produced in the soft tissues of the hindleg of the dog by various missiles at various velocities. Yale University, School of Medicine.

TEXTILES AND TEXTILE PRODUCTS

PB L 85438. BERGEN, WERNER VON. The German woolen and worsted industry in World War II. (QM Textile Series Rept 30) Apr 1947. 185 p. Price: Mimeo-$5.00
Information on German woolen and worsted materials, with special reference to items made from wool which have military significance, has been combined in this report for use by the Quartermaster Corps and interested members of the industry. Part I, "Military items," deals with the German standard army uniform cloth, blankets, socks, pressed felts, aviation underwear, and various army fabrics. Part II, "Research to improve military items," contains: (1) Influence of dyeing methods on the wear of uniform cloth; (2) study on the scouring and fulling operation to improve wear; (3) improvement of wear through the use of protecting agents in dyeing; (4) the hygienic properties of cloth; (5) testing of worsted yarn for wear; and (6) increasing wearability of textiles containing wool by "Protectol MT." Part III, "Manufacturing," discusses pulling wool by the use of enzymes, wool scouring, wool grease recovery and other byproducts recovery, dyeing and finishing, non-felting processes, and the German carpet industry. Part IV, "Machinery," describes woolen card at Thomas Scheuffelen A. G., Eberabach (Fils), Wurttemberg, and Gessner ring spinning frame for woolen system. Part V is concerned with German wool grade standards.

PB L 86278. U. S. BUREAU OF AERONAUTICS. Nylon-cloth, rip-stop. (NAVAER Specification 27N4 (Aer)). Nov 1947. 5 p. Price: Microfilm-$1.00 - Photostat-$1.00

CHEMICALS AND ALLIED PRODUCTS

PB L 19926. I.G. FARBENINDUSTRIE, A.G. Patent applications of the Kalle & Co. A.G., Wiesbaden-Biebrach subsidiary, 1939-1945, and of the I.G. Offenbach plant, 1939-1945. (FIAT Microfilm Reel Patents 140, Frames 1-838) 1939-1945. 857 f. Price: Microfilm-$6.00 - Enlargement Print-$86.00
The 151 individual items of this FIAT microfilm reel are listed below. They will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $6.00. Please give the above PB number and the frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
1-66 PB L 19926	Index compiled by Hoechst Patent Office of I.G. Farbenindustrie, A.G., of patent applications of I.G. Kalle, 1939-1945, giving internal number, patent office number, date, and German title of application. In German.	$7.00
67-70 PB L 19926	Process for treatment of superpolyamides. Ger. patent application K 155450 IVd/12o, dated Aug 25, 1939. In German.	1.50
71-77 PB L 19926	Process for the preparation of coatings, films threads, etc. from superpolyamides. Ger. patent application K 155468 IVc/39b, dated Aug 20, 1939. In German.	1.50
78-81 PB L 19926	Coating, impregnating, and adhesive agents. Ger. patent application K 155550 IVc/22g, dated Sep 9, 1939. In German.	1.50
82-86 PB L 19926	Detergents. Ger. patent application K 155603 IVd/8i, dated Sep 15, 1939. In German.	1.50
87-89 PB L 19926	Wire-glass substitute. Ger. patent application L 155821 XII/39a, dated Oct 13, 1939. In German.	1.50
90-91A PB L 19926	Washing and cleansing agents. Ger. patent application K 155897 IVd/8i, dated Oct 30, 1939. In German.	1.50
92-94 PB L 19926	Adhesive. Ger. patent application K 155926 IVd/22i, dated Nov 3, 1939. In German.	1.50
95-104 PB L 19926	Binding film. Ger. patent application K 155933 IVc/39b, dated Nov 4, 1939. In German.	1.50
105-111 PB L 19926	Light-sensitive layers. Ger. patent application K 156035 IVa/57b, dated Nov 20, 1939. In German.	1.50
112-115 PB L 19926	Washing and dispersion agent. Ger. patent application K 156060 IVd/8i, dated Nov 24, 1939. In German.	1.50
116-121 PB L 19926	Process for sensitizing diazo printing papers. Ger. patent application K 156335 IVa/57b, dated Dec 27, 1939. In German.	1.50
122-126 PB L 19926	Process for preparation of colloids. Ger. patent application K 156693 IVc/120, dated Feb 5, 1940. In German.	1.50
127-133 PB L 19926	Photo-printing appliance. Ger. patent application K 156872 IIa/57c, dated Feb 26, 1940. In German.	1.50
134-137 PB L 19926	Process for production of sheets, films, strips, etc. from superpolyamides. Ger. patent application K 157045 IVc/39b, dated Mar 13, 1940. In German.	1.50
138-140 PB L 19926	Yarn. Ger. patent application K 157563 VII/76c, dated Mar 11, 1940. In German.	1.50
141-149 PB L 19926	Automatic photo-printing machine. Ger. patent application K 157711 IIa/57c, dated May 27, 1940. In German.	1.50
150-153 PB L 19926	Process for preparation of powdery cellulose ethers. Ger. patent application K 157742 IVc/12o, dated May 30, 1940. In German.	1.50
154-161 PB L 19926	Photo-printing appliance. Ger. patent application K 157894 IIa/57c, dated Jun 15, 1939. In German.	1.50
162-165 PB L 19926	Preparation of superpolyamide films. Ger. patent application L 158047 IVc/39b, dated Jul 6, 1940. In German.	1.50
166-172 PB L 19926	Process for increasing the sensitivity of diazo photo printing papers. Ger. patent application K 158329 IVa/57b, dated Aug 5, 1940. In German.	1.50
173-178 PB L 19926	Photo-printing appliance. Ger. patent application K 158494 IIa/57c, dated Aug 22, 1940. In German.	1.50
179-184 PB L 19926	Mounting process. Ger. patent application K 158761 IVd/75c, dated Sep 19, 1940. In German.	1.50
185-190 PB L 19926	Cation exchanger. Ger. patent application K 158952 IVc/12o, dated Oct 10, 1940. In German.	1.50
191-196 PB L 19926	Process for producing cellulose ethers. Ger. patent application K 158953 IVc/12o, dated Oct 14, 1940. In German.	1.50
197-201 PB L 19926	Anion exchanger. Ger. patent application K 159054 IVb/12g, dated Oct 25, 1940. In German.	1.50
202-205 PB L 19926	Process for producing cellulose ethers. Ger. patent application K 159280 IVc/12o, dated Nov 16, 1940. In German.	1.50
206-209 PB L 19926	Process for preparation of cellulose solutions. Ger. patent application K 159281 IVc/29b, dated Nov 16, 1940. In German.	1.50
210-216 PB L 19926	Process for strengthening regenerated cellulose fibers. Ger. patent application K 159387 IVd/8k, dated Nov 26, 1940. In German.	1.50
217-223 PB L 19926	Process for dissolving of superpolyamides. Ger. patent application K 159641 IVc/39b, dated Dec 18, 1940. In German.	1.50
224-230 PB L 19926	Azo components for diazo printing. Ger. patent application K 159883 IVa/57bK, dated Jan 18, 1941. In German.	1.50
231-233 PB L 19926	Process for gluing polyvinyl chloride films. Ger. patent application K 159884 IVc/39b, dated Jan 20, 1941. In German.	1.50
234-237 PB L 19926	Process for producing carbohydrate ethers. Ger. patent application K 160176 IVc/12o, dated Feb 17, 1941. In German.	1.50

238-241 PB L 19926 — Photo printing material. Ger. patent application K 160415 IVa/57b, dated Mar 8, 1941. In German. 1.50

242-246 PB L 19926 — Process for treatment of superpolyamides. Ger. patent application K 160440 IVc/39b, dated Mar 10, 1941. In German. 1.50

247-249 PB L 19926 — Bag for brewing tea, coffee, etc. Ger. patent application K 160534 I/34f, dated Mar 20, 1941. In German. 1.50

250-255 PB L 19926 — Coving process. Ger. patent application K 160657 IVa/57b, dated Mar 31, 1941. In German. 1.50

256-260 PB L 19926 — Process for production of detergent powders. Ger. patent application K 160658 IVd/8i, dated Apr 1, 1941. In German. 1.50

261-263 PB L 19926 — Detergent. Ger. patent application K 160785 IVd/8i, dated Apr 7, 1941. In German. 1.50

264-266 PB L 19926 — Process for preparation of cellulose ethers. Ger. patent application K 160807 IVc/12o, dated Apr 10, 1941. In German. 1.50

267-274 PB L 19926 — Cardboard container. Ger. patent application K 160852 XII/81c, dated Apr 21, 1941. In German. 1.50

275-279 PB L 19926 — Process for preparation of cellulose ethers. Ger. patent application K 161336 IVc/12o, dated Jun 7, 1941. In German. 1.50

280-287 PB L 19926 — Process for treatment of superpolyamides. Ger. patent application K 161391 IVc/39b, dated Jun 13, 1941. In German. 1.50

288-291 PB L 19926 — Process for treatment of polyurethane shapes. Ger. patent application K 161452 IVc/39b, dated Jun 20, 1941. In German. 1.50

292-296 PB L 19926 — Process for production of soft soaps. Ger. patent application K 161559 IVd/8i, dated Jun 28, 1941. In German. 1.50

297-300 PB L 19926 — Process for increasing the water-resistance of diazo prints. Ger. patent application K 161546 IVa/57b, dated Jun 30, 1941. In German. 1.50

301-303 PB L 19926 — Process for production of enzyme preparations. Ger. patent application K 161609 IVc/12g, dated Jul 3, 1941. In German. 1.50

304-307 PB L 19926 — Improving the milling capacity of soaps. Ger. patent application K 161583 IVa/23e, dated Jul 4, 1941. In German. 1.50

308-310 PB L 19926 — Process for manufacture of casting cores. Ger. patent application K 162242 VI/31c, dated Sep 19, 1941. In German. 1.50

311-314 PB L 19926 — Soft soaps. Ger. patent application K 162247 IVa/23e, dated Sep 19, 1941. In German. 1.50

315-318 PB L 19926 — Cation exchange materials. Ger. patent application K 162459 IVb/12g, dated Oct 11, 1941. In German. 1.50

319-323 PB L 19926 — Process for production of sulfuric acid esters of cellulose. Ger. patent application K 162458 IVc/12o, dated Oct 15, 1941. In German. 1.50

324-327 PB L 19926 — Core binder. Ger. patent application K 162529 VI/31c, dated Oct 22, 1941. In German. 1.50

328-331 PB L 19926 — Process for preparation of superpolyamide or polyurethane solutions. Ger. patent application K 163058 IVc/39b, dated Dec 8, 1941. In German. 1.50

332-336 PB L 19926 — Process for testing the smoothness of textures, films, papers, and other sheet-like materials. Ger. patent application K 163087 IXb/42k, dated Dec 10, 1941. In German. 1.50

337-341 PB L 19926 — Light-sensitive colloid films for the production of tanned pictures. Ger. patent application K 163099 IVa/57b, dated Dec 13, 1941. In German. 1.50

342-345 PB L 19926 — Process for testing the stiffness of textures, films papers, and similar materials. Ger. patent application K 163088 IXb/42k, dated Dec 13, 1944. In German. 1.50

346-351 PB L 19926 — Cation exchanger. Ger. patent application K 163289 IVb/12g, dated Jan 8, 1942. In German. 1.50

352-353 PB L 19926 — Process for preparation of casting moulds. Ger. patent application K 163646 VI/31c, dated Feb 13, 1942. In German. 1.50

354-363 PB L 19926 — Light-sensitive films. Ger. patent application K 163700 IVa/57b, dated Feb 19, 1942. In German. 1.50

364-366 PB L 19926 — Method of developing diazo photo printing material. Ger. patent application K 163699 IVa/57b, dated Feb 19, 1942. In German. 1.50

367-369 PB L 19926 — Anion exchanger. Ger. patent application K 164016 IVb/12g, dated Mar 14, 1942. In German. 1.50

370-374 PB L 19926 — Process for the measuring of forces. Ger. patent application K 164035 IXb/42k, dated Mar 18, 1942. In German. 1.50

375-377 PB L 19926 — Soaking agent. Ger. patent application K 164036 IVd/8i, dated Mar 19, 1942. In German. 1.50

378-382 PB L 19926 — Process for measuring of pressures. Ger. patent application K 164073 IXb/42k, dated Mar 20, 1942. In German. 1.50

383-386 PB L 19926 — Process for production of vessels from film-forming substances. Ger. patent application K 164122 XII/39a, dated Mar 25, 1942. In German. 1.50

387-391 PB L 19926 — Equipment for winding up cloth. Ger. patent application K 164168 VII/8f, dated Mar 28, 1942. In German. 1.50

392-405 PB L 19926 — Light-sensitive layers. Ger. patent application K 164264 IVa/57b, dated Apr 4, 1942. In German. 1.50

406-409 PB L 19926 — Gluing process. Ger. patent application K 164402 XII/81a, dated Apr 10, 1942. In German. 1.50

410-412 PB L 19926 — Light sensitive layers. Ger. patent application K 164630 IVa/57b, dated May 8, 1942. In German. 1.50

413-417 PB L 19926 — Process for preparation of condensation products. Ger. patent application K 164647 IVc/39c, dated May 8, 1942. In German. 1.50

418-422 PB L 19926 **Process for production of casting cores or moulds.** Ger. patent application K 164743 VI/31c, dated May 19, 1942. In German. 1.50

423-425 PB L 19926 **Process for treatment of superpolyamides.** Ger. patent application K 164774 IVc/39b, dated May 20, 1942. In German. 1.50

426-432 PB L 19926 **Process for continuous etherification of cellulose or cellulose derivatives.** Ger. patent application K 164801 IVc/12o, dated May 23, 1942. In German. 1.50

433-437 PB L 19926 **Light-sensitive layers.** Ger. patent application K 164825 IVa/57b, dated May 28, 1942. In German. 1.50

438-442 PB L 19926 **Process for milling of seeds.** Ger. patent application K 165151 IVa/23e, dated Jul 1, 1942. In German. 1.50

443-446 PB L 19926 **Process for preparation of condensation products.** Ger. patent application K 165246 IVc/39c, dated Jul 9, 1942. In German. 1.50

447-452 PB L 19926 **Process for increasing the adhesiveness of water-proof layers on cellulose hydrate films.** Ger. patent application K 165533 IVd/75c, dated Aug 4, 1942. In German. 1.50

453-456 PB L 19926 **Light-sensitive materials for the production of printing forms.** Ger. patent application K 165770 IVa/57d, dated Sep 2, 1942. In German. 1.50

457-461 PB L 19926 **Process for attaching plastic ribbons.** Ger. patent application K 165921 X/33d, dated Sep 18, 1942. In German. 1.50

462-466 PB L 19926 **Process for attaching plastic ribbons.** Ger. patent application K 166051 X/33b, dated Oct 2, 1942. In German. 1.50

467-468 PB L 19926 **Process for crushing film-shaped regenerated cellulose.** Ger. patent application K 166553 IVc/39b, dated Nov 21, 1942. In German. 1.50

469-470 PB L 19926 **Process for producing ribbons from superpolyamides or polyurethanes.** Ger. patent application K 166606 VII/25c, dated Nov 23, 1942. In German. 1.50

471-475 PB L 19926 **Process for attaching plastic ribbons.** Ger. patent application K 166800 X/44a, dated Dec 11, 1942. In German. 1.50

476-478 PB L 19926 **Process for crushing vegetable material.** Ger. patent application K 166981 III/50c, dated Dec 21, 1942. In German. 1.50

479-482 PB L 19926 **Light-sensitive layers.** Ger. patent application K 166964 IVa/57b, dated Dec 23, 1942. In German. 1.50

483-486 PB L 19926 **Process for production of printing forms.** Ger. patent application K 167130 IVa/57d, dated Jan 14, 1943. In German. 1.50

487-490 PB L 19926 **Process for treating superpolyamides.** Ger. patent application K 167141 IVc/39b, dated Jan 14, 1943. In German. 1.50

491-494 PB L 19926 **Increasing the adhesiveness of water-proof layers on cellulose hydrate films.** Ger. patent application K 167166 IVc/75c, dated Jan 15, 1943. In German. 1.50

495-499 PB L 19926 **Process for increasing the light-sensitibity of light-sensitive layers.** Ger. patent application K 167235 IVa/57b, dated Jan 23, 1943. In German. 1.50

500-502 PB L 19926 **Process for production of printing forms.** Ger. patent application 168061 IVa/57d, dated Apr 3, 1943. In German. 1.50

503-507 PB L 19926 **Coating materials for reproduction purposes.** Ger. patent application K 168062 IVa/57d, dated Apr 5, 1943. In German. 1.50

508-510 PB L 19926 **Process for production of printing forms.** Ger. patent application K 168111 IVa/57d, dated Apr 8, 1943. In German. 1.50

511-513 PB L 19926 **Process for gluing ribbons or films of thermoplastic synthetic material.** Ger. patent application K 168112 XII/39a, dated Apr 9, 1943. In German. 1.50

514-518 PB L 19926 **Process for increasing the adhesiveness of water-proof layers to cellulose hydrate films.** Ger. patent application K 168586 IVd/75c, dated May 24, 1943. In German. 1.50

519-526 PB L 19926 **Photo-printing process.** Ger. patent application K 168600 IVa/57b, dated May 28, 1943. In German. 1.50

527-531 PB L 19926 **Light-sensitive layers for diazo printing.** Ger. patent application K 168792 IVa/57b, dated Jun 12, 1943. In German. 1.50

532-537 PB L 19926 **Packing.** Ger. patent application K 168863 XII/8kc, dated Jun 23, 1943. In German. 1.50

538-539 PB L 19926 **Process for crushing of film-shaped non-thermoplastic cellulose ethers.** Ger. patent application K 169019 XII/39a, dated Jul 5, 1943. In German. 1.50

540-545 PB L 19926 **Washing process.** Ger. patent application K 169020 IVd/8i, dated Jul 8, 1943. In German. 1.50

546-555 PB L 19926 **Light-sensitive compounds for diazo printing.** Ger. patent application K 169065 IVa/57b, dated Jul 10, 1943. In German. 1.50

556-560 PB L 19926 **Process for purifying cellulose ether.** Ger. patent application K 169266 IVc/12o, dated Aug 2, 1943. In German. 1.50

561-565 PB L 19926 **Binder for cores and moulds for castings.** Ger. patent application K 169353 II/31c, dated Aug 13, 1943. In German. 1.50

566-569 PB L 19926 **Light-sensitive colloidal layers for production of tanned pictures.** Ger. patent application K 169517 IVa/57b, dated Aug 30, 1943. In German. 1.50

570-573 PB L 19926 **Process for applying coatings on paper, cardboard, etc.** Ger. patent application K 170451 VII/55f, dated Dec 24, 1943. In German. 1.50

574-578 PB L 19926 **Closing device for pouches from thermoplastic sheets.** Ger. patent application K 170875 XII/81a, dated Feb 26, 1944. In German. 1.50

579-581 PB L 19926 — Process for the production of films, sheets, etc. from solutions. Ger. patent application K 171194 XII/39a, dated Apr 3, 1944. In German. 1.50

582-586 PB L 19926 — Process for production of carbamide resins resistant to storage. Ger. patent application K 171219 IVc/39c, dated Apr 8, 1944. In German. 1.50

587-593 PB L 19926 — Device for developing photo copies with gaseous agents. Ger. patent application K 171672 IIa/57c, dated Jun 17, 1944. In German. 1.50

594-602 PB L 19926 — Azo components for diazo printing. Ger. patent application K 171716 IVa/57h, dated Jun 26, 1944. In German. 1.50

603-605 PB L 19926 — Sheets for cold-storage packing. Ger. patent application K 171894 XII/81c, dated Jul 8, 1944. In German. 1.50

606-609 PB L 19926 — Packing of refrigeration goods. Ger. patent application K 172133 XII/81a, dated Aug 7, 1944. In German. 1.50

610-653 PB L 19926 — Index compiled by Hoechst Patent Office of I.G. Farbenindustrie, A.G. of patent applications of I.G. Offenbach, 1939-1945, giving internal number, patent office number, date, and German title of application. In German. 4.50

654-660 PB L 19926 — Process for production of monoazo dyestuffs. Ger. patent application I 64252 IVd/22a, dated Apr 1, 1939. In German. 1.50

661-663 PB L 19926 — Process for preparation of 1-chloromethyl-2-hydroxy-naphthalene-3-carboxylic acid arylides. Ger. patent application I 64908 IVd/12o, dated Jun 16, 1939. In German. 1.50

664-667 PB L 19926 — Process for preparation of chloromethyl hydroxy naphtalene derivatives. Ger. patent application I 64916 IVd/12o, dated Jun 20, 1939. In German. 1.50

668-672 PB L 19926 — Process for preparation of water-soluble compounds. Ger. patent application I 64918 IVd/12o, dated Jun 21, 1939. In German. 1.50

673-680 PB L 19926 — Process for preparation of basically substituted aromatic hydroxy compounds. Ger. patent application I 65089 IVc/12q, dated Jul 6, 1939. In German. 1.50

681-683 PB L 19926 — Process for fast dyeing. Ger. patent application I 65148 IVd/8m, dated Jul 17, 1939. In German. 1.50

684-687 PB L 19926 — Process for fast dyeing. Ger. patent application I 65166 IVd/8m, dated Jul 18, 1939. In German. 1.50

688-691 PB L 19926 — Process for fast dyeing. Ger. patent application I 65206 IVa/8m, dated Jul 20, 1939. In German. 1.50

692-699 PB L 19926 — Process for fast dyeing. Ger. patent application I 65232 IVa/8m, dated Jul 24, 1939. In German. 1.50

700-706 PB L 19926 — Process for preparation of monoazo dyestuffs. Ger. patent application I 65299 IVd/22a, dated Jul 28, 1939. In German. 1.50

707-720 PB L 19926 — Process for fast dyeing. Ger. patent application I 65428 IVd/8m, dated Aug 12, 1939. In German. 1.50

721-728 PB L 19926 — Process for preparation of monoazo dyestuffs. Ger. patent application I 65722 IVd/22a, dated Oct 2, 1939. In German. 1.50

729-735 PB L 19926 — Process for preparation of monoazo dyestuffs. Ger. patent application I 66186 IVd/22a, dated Dec 22, 1939. In German. 1.50

736-744 PB L 19926 — Process for preparation of diazo solutions and readily soluble diazo preparations from solid diazonium chloride-zinc chloride complex salts. Ger. patent application I 67434 IVc/12q, dated Jul 13, 1940. In German. 1.50

745-752 PB L 19926 — Process for improving water-fastness of ice colors. Ger. patent application I 67781 IVd/8m, dated Sep 4, 1940. In German. 1.50

753-757 PB L 19926 — Process for production of monoazo dyestuffs. Ger. patent application I 67950 IVd/22a, dated Oct 2, 1940. In German. 1.50

758-761 PB L 19926 — Process for preparation of carboxylic esters of 1-halogene (4) butanols. Ger. patent application I 68015 IVd/12o, dated Oct 10, 1940. In German. 1.50

762-767 PB L 19926 — Process for production of monoazo dyestuffs insoluble in water. Ger. patent application I 68495 IVd/22a, dated Dec 19, 1940. In German. 1.50

768-773 PB L 19926 — Process for production of monoazo dyestuffs. Ger. patent application I 69086 IVd/22a, dated Mar 10, 1941. In German. 1.50

774-777 PB L 19926 — Process for production of carboxylic esters of substituted 1-chloro and 1-bromo-(4) butanol. Ger. patent application I 69526 IVd/12o, dated May 3, 1941. In German. 1.50

778-781 PB L 19926 — Process for preparation of 1.4-dichloro or 1.4-dibromo-(5) pentanol and their esters. Ger. patent application I 69729 IVa/12o, dated May 29, 1941. In German. 1.50

782-785 PB L 19926 — Plasticizers. Ger. patent application I 71357 IVc/39b, dated Jan 15, 1942. In German. 1.50

786-791 PB L 19926 — Process for production of isonitroso-acetone. Ger. patent application I 71429 IVc/12o, dated Jan 29, 1942. In German. 1.50

792-793 PB L 19926 — Process for separating 2-hydroxy-naphtalene-6-carboxylic acid and 2-hydroxy-naphtalene-3-carboxylic acid. Ger. patent application I 71773 IVc/12q, dated Mar 11, 1942. In German. 1.50

794-799 PB L 19926 — Process for producing condensation products. Ger. patent application I 71842 IVc/39c, dated Mar 23, 1942. In German. 1.50

800-801 PB L 19926 — Plasticizers. Ger. patent application I 71981 IVc/39b, dated Apr 4, 1942. In German. 1.50

802-807 PB L 19926 — Process for producing condensation products. Ger. patent application I 72714 IVc/39c, dated Jul 8, 1942. In German. 1.50

808-809 PB L 19926 — Process for producing hydrogenation products. Ger. patent application

I 72715 IVc/39c, dated Jul 9, 1942. In German. 1.50

810-815 PB L 19926 **Process for producing condensation products.** Ger. patent application I 72966 IVc/39c, dated Aug 15, 1942. In German. 1.50

816 PB L 19926 **Plasticizers.** Ger. patent application I 73037 IVc/39b, dated Aug 26, 1942. In German. 1.50

817-820 PB L 19926 **Process for producing esters.** Ger. patent application I 73120 IVc/39c, dated Sep 4, 1942. In German. 1.50

821-822 PB L 19926 **Plasticizers.** Ger. patent application I 73108 IVa/39b, dated Sep 5, 1942. In German. 1.50

823-826 PB L 19926 **Process for production monoazo dyestuffs insoluble in water.** Ger. patent application I 74567 IVc/22a, dated Mar 13, 1943. In German. 1.50

827-831 PB L 19926 **Lacquers and impregnation agents.** Ger. patent application I 76329 IVc/22h, dated Nov 26, 1943. In German. 1.50

832-833 PB L 19926 **Stable lacquer solutions.** Ger. patent application I 78113 IVc/22h, dated Sep 1, 1944. In German. 1.50

834-835 PB L 19926 **Delustering agents.** Ger. patent application I 78576 IVc/22h, dated Nov 27, 1944. In German. 1.50

836-836A PB L 19926 **Process for preparing 1,4-cyanobutanol.** Ger. patent application I 78659 IVd/12o, dated Dec 19, 1944. In German. 1.50

837-838 PB L 19926 **Plasticizers.** Ger. patent application I 78672 IVc/39b, dated Dec 19, 1944. In German. 1.50

PB L 70266. REICHSPATENTAMT, BERLIN. German patents: Class 8m; Groups 8, 9, 10, 11 and 12. Dyeing and Mordanting; Developing colors upon the fibers; Preparation of dyes. (FIAT Microfilm Reel AA 71, Frames 1796-2845) 1880-1941. 1049 f. Price: Microfilm-$6.00 - Enlargement print-$105.00

This FIAT reel consisting of 561 patents dating from 1880-1941, covers dyeing, mordanting and weighting of textiles. Individual items are listed below and will be available as enlargement prints. The entire reel may be purchased as a microfilm for $6.00. Please include PB and frame numbers when ordering individual items. In German.

Frames	Title	Price
1796-1797 PB L 70266	CASSELLA, LEOPOLD, & CO., FRANKFURT, A.M. Method for reserving during dyeing with sulfur dyes. Ger. patent 130 626 dated May 30, 1901. Class 8m, group 8. In German.	$1.50
1798-1799 PB L 70266	GESELLSCHAFT FUER CHEMISCHE INDUSTRIE, BASEL. Dyeing process of animal fibers and mixed textiles with sulfur dyes. Class 8m, group 8. Ger. patent 130 848 dated Jun 22, 1901. In German.	1.50
1800 PB L 70266	GESELLSCHAFT FUER CHEMISCHE INDUSTRIE, BASEL, BASEL, SWITZERLAND. Process for avoiding the brume stain produced by dyeing with sulfur dyes. Class 8m, group 8. Ger. patent 390 081 dated Mar 20, 1923. In German.	1.50
1801-1802 PB L 70266	FARBWERKE VORM. MEISTER LUCIUS & BRUENING, HOECHST, A.M. Method for dyeing animal fibers in half wool or similar fiber mixtures. Class 8m, group 8. Ger. patent 408 404 dated Jun 29, 1921. Inventor: Peterhauser. In German.	1.50
1803 PB L 70266	FARBWERKE VORM. MEISTER LUCIUS & BRUENING, HOECHST, A.M. Process for dyeing rayon with sulfur dyes. Class 8m, group 8. Ger. patent 409 105 dated Jul 2, 1921. Inventor: Mueller. In German. Supplement to patent No. 408 404.	1.50
1804-1805 PB L 70266	I.G. FARBENINDUSTRIE A.G., FRANKFURT, A.M. Method for simultaneous stripping and dyeing of colored, rayon or cotton waste material. Class 8m, group 8. Ger. patent 494 205 dated May 7, 1927. Inventor: Brandt. In German.	1.50
1806-1807 PB L 70266	BENNERT, CARL (Inventor). Process for employing decomposition products of albuminous matter. Class 8m, group 9. Ger. patent 332 476 dated Jan 19, 1916. In German. Supplement to patent No. 330 133.	1.50
1808-1809 PB L 70266	FARBENFABRIKATION VORM. FRIEDR, BAYER & CO., LEVERKUSEN, GERMANY. Reserving process for silk or wool in mixed textiles during the dyeing process with sulfur dyes. Class 8m, group 8. Ger. patent 326 649 dated Sep 18, 1914. In German.	1.50
1810 PB L 70266	FARBWERKE VORM. MEISTER LUCIUS & BRUENING, HOECHST, A.M. Dyeing method with sulfur dyes. Class 8m, group 8. Ger. patent 221 887 dated Jan 18, 1907. In German. Supplement to patent No. 199 167 of January 17, 1907.	1.50
1811-1812 PB L 70266	FARBWERKE VORM. MEISTER LUCIUS & BRUENING, HOECHST, A.M. Process for manufacturing of fast, durable, sulfur dyes leuco alkali preparations. Class 8m, group 8. Ger. patent 268 398 dated Apr 25, 1911. In German.	1.50
1813 PB L 70266	FARBWERKE MUEHLHEIM VORM. A. LEONHARDT & CO., MUEHLHEIM A.M. Safety method for silk in half silky textiles during the dyeing process with sulfur black. Class 8m, group 8. Ger. patent 275 886 dated Nov 19, 1913. In German.	1.50
1814-1815 PB L 70266	HOLLIDAY, READ, & SONS, LTD., HUDDERSFIELD, ENGLAND. Method for topping fibers with sulfur dyes and with other dyes. Class 8m, group 8. Ger. patent 270 992 dated Jan 3, 1913. In German.	1.50
1816-1817 PB L 70266	CASSELLA, LEOPOLD, & CO., G.M.B.H., FRANKFURT, A.M. Method for dyeing animal fiber with sulfur dyes. Class 8m, group 8. Ger. patent 161 190 dated Nov 14, 1901. In German.	1.50
1818-1819	A.G. FUER ANILIN-FABRIKATION,	

PB L 70266 BERLIN. Process for producing sulfur dyes on fibers. Class 8m, group 8. Ger. patent 158 328 dated Mar 14, 1902. In German. 1.50

1820 PB L 70266 FARBWERKE VORM. MEISTER LUCIUS & BRUENING, HOECHST, A.M. Sulfur dyeing process for animal and vegetable fibers. Class 8m, group 8. Ger. patent 224 017 dated Mar 15, 1907. In German. 1.50
Supplement to patent No. 199 167 of Jan 17, 1907.

1821-1822 PB L 70266 FABRIQUES DE PRODUITS CHIMIQUES DE THANN & DE MULHOUSE, MUEHLHAUSEN. Process for printing textiles with sulfur dyes. Class 8m, group 8. Ger. patent 148 964 dated Nov 15, 1901. In German. 1.50

1823-1824 PB L 70266 CASSELLA, LEOPOLD, & CO., G.M.B.H., FRANKFURT, A.M. Method for fixing sulfur dyes during dyeing and printing. Class 8m, group 8. Ger. patent 225 314 dated Aug 7, 1908. In German. 1.50

1825 PB L 70266 I.G. FARBENINDUSTRIE A.G., FRANKFURT, A.M. Process for producing solutions or pastes of nonalkaline sulfur dyes. Class 8m, group 8. Ger. patent 432 112 dated Mar 15, 1924. Inventors: Kesseler and Doering. In German. 1.50

1826-1830 PB L 70266 HOELKEN & CO., BARMEN. Innovation relating to the dyeing process with Vidal black or similar black-dyeing, organic dyes containing sulfur. Class 8m, group 8. Ger. patent 122 456 dated Mar 6, 1898. In German. 1.50

1831-1832 PB L 70266 I.G. FARBENINDUSTRIE, FRANKFURT, A.M. Blue dyeing process on vegetable fiber. Class 8m, group 8. Ger. patent 525 647 dated Feb 26, 1927. Inventors: Herz and Hechtenberg. In German. 1.50

1833 PB L 70266 I.G. FARBENINDUSTRIE A.G., FRANKFURT, A.M. Sulfur dyes pastes. Class 8m, group 8. Ger. patent 518 198 dated Jun 10, 1928. Inventors: Schweitzer-Henning and Hagge. In German. 1.50

1834-1835 PB L 70266 I.G. FARBENINDUSTRIE A.G., FRANKFURT, A.M. Process for producing constant, non-bronzed dyes with sulfur dyes. Class 8m, group 8. Ger. patent 521 716 dated Feb 12, 1928. Inventors: Reddelien and Peters. In German. 1.50

1836-1837 PB L 70266 FARBWERKE MUHLHEIM VORM. A. LEONHARDT & CO., MUHLHEIM A.M. Method for protecting and reserving wool or silk in half wool and half silk fabrics when dyeing with sulfur dyes. Class 8m, group 8. Ger. patent 212 951 dated Sep 12, 1908. In German. 1.50

1838 PB L 70266 KALLE & CO., AKT.-GES., BIEBRICH A. RH. Improving the aftertreatment process of sulfur dyes with hydrogen peroxide. Class 8m, group 8. Ger. patent 185 688 dated Mar 6, 1902. In German. 1.50

1839 PB L 70266 CASSELLA, LEOPOLD, & CO., G.M.B.H., FRANKFURT, A.M. Method for producing fast colors with sulfine dyes in machinery. Class 8m, group 8. Ger. patent 213 582 dated Jul 26, 1908. In German. 1.50

1840-1841 PB L 70266 FARBWERKE MUHLHEIM VORM. A. LEONHARDT & CO., MUHLHEIM A.M. Method for dyeing halfsilk with sulfur dyes in one bath. Class 8m, group 8. Ger. patent 210 883 dated Aug 26, 1908. In German. 1.50

1842-1843 PB L 70266 SOCIÉTÉ ANONYME DES MATIÈRES COLORANTES ET PRODUITS CHIMIQUES DE ST. DENIS, PARIS. Fixing of sulfur dye colors with copper salts. Class 8m, group 8. Ger. patent 112 799 dated Apr 29, 1899. In German. 1.50

1844-1845 PB L 70266 FARBWERKE VORM. MEISTER LUCIUS & BRUENING, HOECHST A.M. Method for producing fast colors by dyes based on patents No. 114 266 and 114 267 and with nonoxidizing metal salts. Class 8m, group 8. Ger. patent 124 507 dated Nov 18, 1900. In German. 1.50

1846 PB L 70266 GROSSER, FRANZ (Inventor). Process for dyeing warp beams with sulfur dyes. Class 8m, group 8. Ger. patent 297 818 dated Apr 13, 1916. In German. 1.50

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2189-2190 PB L 70266 I.G. FARBENINDUSTRIE A.G., FRANKFURT, MAIN. Process

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PB L 70266 (Inventors). Process for weighting fibers. Class 8m, group II. Ger. patent 521 122 dated Dec 10, 1925. In German. 1.50

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2633-2634 PB L 70266 — CLAVEL, RENÉ (Inventor). Process for dyeing cellulose acetate. Class 8m, group 12. Ger. patent 408 179 dated Sep 1, 1922. In German. 1.50

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Supplement to patent 162 625 of Nov 14, 1903.

2845 FARBWERKE VORM. MEISTER LUCIUS & BRÜNING, HÖCHST A.M.
PB L 70266 Production of dischargeable dyeings on cotton. Class 8m, group 12. Ger. patent 267 473 dated Feb 12, 1911. In German. 1.50
Supplement to patent 246 288.

PB L 70314. REICHSPATENTAMT, BERLIN. German patents: Class 12i, groups 9-14. Metalloids and their compounds; halogens and their compounds; oxygen and related material. (FIAT Microfilm Reel BB 74, Frames 9886-9999, and 1-991) 1879-1941. 1206 f. Price: Microfilm-$6.00 - Enlargement print-$121.00
This reel, prepared by FIAT investigators in Germany, contains 378 patents dated between 1879 and 1941. Class 12i, groups 9-14, includes metalloids and their compounds; bromine, iodine, and fluorine and their compounds; preparation of oxygen based on the "Brin" process, "Tessie du Motay" method, by electrolysis of water and various other methods. The entire reel may be purchased as a microfilm for $6.00. In German.

PB L 70314-S. REICHSPATENTAMT, BERLIN. German patents: Class 12i, groups 9-14. Metalloids and their compounds; halogens and their compounds; oxygen and related material. (FIAT Microfilm Reel BB 74, Frames 9886-9999, and 1-991, abstract cards) 1879-1941. 378 p. Price: Microfilm-$8.00 - Photostat-$26.00
Abstract cards of the individual items on the above reel, BB 74, PB L 70314, prepared by FIAT personnel in Germany. Each abstract card gives the German title with an English translation, patent number, classification, date, patentee and inventor.

PB L 64111. REICHSPATENTAMT, BERLIN. German patents. Class 12k, groups 7, 8, and 9: Ammonia and cyanogen compounds. (FIAT Microfilm Reel BB 76, Frames 2019-3060) 1880-1942. 1042 f. Price: Microfilm-$7.00 - Enlargement print-$106.00
This microfilm reel, prepared by FIAT in Germany from the files of the German Patent Office, contains 383 patents in Class 12k, groups 7, 8, and 9: Ammonia, cyanogen and their compounds. Preparation of cyanogen by decomposition of nitrogenous organic matter, synthesis of cyanogen compounds, and separation of cyanogen compounds from gases and vapors containing cyanogen are included. The patents are dated between 1880 and 1942. The entire reel is available as a microfilm for $7.00 or as enlargement print for $106.00. In German.

PB L 64111-S. REICHSPATENTAMT, BERLIN. German patents. Class 12k, groups 7, 8, and 9: Ammonia and cyanogen compounds. (FIAT Microfilm Reel BB 76, Frames 2019-3060, abstract cards) 1880-1942. 383 p. Price: Microfilm-$7.00 - Photostat-$39.00
These are abstract cards for the above FIAT microfilm reel BB 76, PB L 64111, prepared by FIAT personnel in Germany. Each abstract card gives the German title with an English translation, patent number, classification, date, patentee and inventor.

PB L 70315. REICHSPATENTAMT, BERLIN. German patents: Class 12m, groups 6, 7, 9, and Class 12n, groups 5, 6, and 8. Compounds of earth metals and alkaline earth metals; compounds of heavy metals. (FIAT Microfilm Reel BB 79, Frames 1-1057) 1882-1940. 1057 f. Price: Microfilm-$6.00 - Enlargement print-$106.00
This reel, prepared by FIAT investigators in Germany, contains 487 patents dated between 1882-1940. Class 12m, groups 6, 7 and 9 deal with alumina, aluminum salts and compounds of the rare earth metals. The latter part of the reel, covering class 12n, groups 5, 6 and 8, includes copper compounds, zinc compounds and mercury, silver, and gold compounds. The entire reel may be purchased as a microfilm for $6.00. In German.

PB L 70315-S. REICHSPATENTAMT, BERLIN. German patents: Class 12m, groups 6, 7, 9, and Class 12n, groups 5, 6, and 8. Compounds of earth metals and alkaline earth metals; compounds of heavy metals. (FIAT Microfilm Reel BB 79, Frames 1-1057, abstract cards) 1882-1940. 487 p. Price: Microfilm-$10.00 - Photostat-$33.00
Abstract cards of the individual items on the above reel, BB 79, PB L 70315, prepared by FIAT personnel in Germany. Each abstract card gives the German title with an English translation, patent number, classification, date, patentee and inventor.

PB L 70275. REICHSPATENTAMT, BERLIN. German patents: Class 12o, groups 1-4: Hydrocarbons. (FIAT Microfilm Reel AA 90, Frames 505-1652) 1881-1941. 1147 f. Price: Microfilm-$6.00 - Enlargement print-$115.00
This reel, prepared by FIAT investigators in Germany, contains 499 patents dated between 1881 and 1941. Class 12o, groups 1-4, includes hydrocarbons and their substitution products. The entire reel may be purchased as a microfilm for $6.00. In German.

PB L 70275-S. REICHSPATENTAMT, BERLIN. German patents: Class 12o, groups 1-4: Hydrocarbons. (FIAT Microfilm Reel AA 90, Frames 505-1652, abstract cards) 1881-1941. 499 p. Price: Microfilm-$10.00 - Photostat-$34.00
Abstract cards of the individual items on the above reel, AA 90, PB L 70275, prepared by FIAT personnel in Germany. Each abstract card gives the German title with English translation, patent number, classification, patentee and inventor.

PB L 64145. REICHSPATENTAMT, BERLIN. German patents: Class 12o, groups 5, 7, 8, 9. Alcohols, aldehydes, acetone, etc. (FIAT Microfilm Reel AA 109, Frames 4949-5958) 1881-1935. 1010 f. Price: Microfilm-$7.00 - Enlargement print-$102.00

This reel, prepared by FIAT investigators in Germany, contains 462 patents dated between 1881 and 1935. Class 12o, groups 5, 7, 8, and 9, includes alcohols and aldehydes. The entire reel may be purchased as a microfilm for $7.00. In German.

PB L 84145-S. REICHSPATENTAMT, BERLIN. German patents: Class 12o, groups 5, 7, 8, 9, Alcohols, aldehydes, acetone, etc. (FIAT Microfilm Reel AA 109, Frames 4949-5956, abstract cards) 1881-1935. 462 p. Price: Microfilm-$7.00 - Photostat-$47.00
Abstract cards of the individual items on the above reel, AA 109, PB L 84145, prepared by FIAT personnel in Germany. Each abstract card shows the German title with English translation, patent number, classification, date, patentee and/or inventor.

PB L 70278. REICHSPATENTAMT, BERLIN. German patents: Class 12o, group 19 and Class 12q, groups 6-13: Compounds with unsaturated chains, and amines, phenols, naphthols, amino phenols, amino naphthols. (FIAT Microfilm Reel AA 99, Frames 6331-7328) 1881-1941. 997 f. Price: Microfilm-$6.00 - Enlargement print-$100.00
This reel, prepared by FIAT investigators in Germany, contains 462 patents, dated between 1881-1941. Class 12o, group 19, includes compounds with unsaturated chains in general. The latter part of the reel includes class 12q, groups 6-13, covering amino acids, naphthylamine monosulfonic acids, naphthylamine di- and poly-sulfonic acids, amines obtained by condensation of amines with formaldehyde, nitrosamines, diazo compounds, azo, azoxy, and hydrazo compounds and finally hydrazine compounds. The entire reel may be purchased as a microfilm for $6.00. In German.

PB L 70278-S. REICHSPATENTAMT, BERLIN. German patents: Class 12o, group 19 and Class 12q, groups 6-13: Compounds with unsaturated chains; and amines, phenols, naphthols, amino phenols, amino naphthols. (FIAT Microfilm Reel AA 99, Frames 6331-7328, abstract cards) 1881-1941. 462 p. Price: Microfilm-$10.00 - Photostat-$31.00
Abstract cards of the individual items on the above reel, AA 99, PB L 70278, prepared by FIAT personnel in Germany. Each abstract card gives the German title with an English translation, patent number, classification, date, patentee and inventor.

PB L 70321. REICHSPATENTAMT, BERLIN. German patents: Class 12o, groups 26 and 27: Miscellaneous organic compounds. (FIAT Microfilm Reel BB 81, Frames 467-1662) 1890-1940. 1195 f. Price: Microfilm-$6.00 - Enlargement print-$119.50
This reel, prepared by FIAT investigators in Germany, contains 512 patents dated between 1890 and 1940. Class 12o, group 26, includes miscellaneous organic compounds. Only a few items of class 12o, group 27, which includes patents on general organic processes, are on this reel. The entire reel may be purchased as a microfilm for $6.00. In German.

PB L 70321-S. REICHSPATENTAMT, BERLIN. German patents: Class 12o, groups 26 and 27: Miscellaneous organic compounds. (FIAT Microfilm Reel BB 81, Frames 467-1662, abstract cards) 1890-1940. 512 p. Price: Microfilm-$11.00 - Photostat-$35.00
Abstract cards of the individual items on the above reel, BB 81, PB L 70321, prepared by FIAT personnel in Germany. Each abstract card gives the German title with English translation, patent number, classification, date, patentee and inventor.

PB L 70324. REICHSPATENTAMT, BERLIN. German patents: Class 12p, group 17; class 12q, group 1. Hormones and amines. (FIAT Microfilm Reel BB 89, Frames 8641-9755) 1887-1941. 1114 f. Price: Microfilm-$6.00 - Enlargement print-$111.50
This reel, prepared by FIAT investigators in Germany, contains 323 patents dated between 1887 and 1941. Class 12p, group 17, includes hormones and class 12q, group 1, describes amines of the benzene series and derivatives, also aliphatic amines. The entire reel may be purchased as a microfilm for $6.00. In German.

PB L 70324-S. REICHSPATENTAMT, BERLIN. German patents: Class 12p, group 17; class 12q, group 1. Hormones and amines. (FIAT Microfilm Reel BB 89, Frames 8641-9755, abstract cards) 1887-1941. 516 p. Price: Microfilm-$11.00 - Photostat-$35.00
Abstract cards of the individual items on the above reel, BB 89, PB L 70324, prepared by FIAT personnel in Germany. Each abstract card gives the German title with English translation, patent number, classification, date, patentee and inventor.

PB L 70325. REICHSPATENTAMT, BERLIN. German patents: Class 12q, groups 1-6. Amines. (FIAT Microfilm Reel BB 90, Frames 1-1111) 1882-1941. 1111 f. Price: Microfilm-$6.00 - Enlargement print-$111.50
This reel, prepared by FIAT investigators in Germany, contains 515 patents dated between 1882 and 1941. Class 12q, groups 1-6, includes amines of the benzine series and derivatives, also aliphatic amines, amines of the naphthalene series, preparation of amines, separation of mixtures of amines, alkylating and arylating amines and various amino acids. The entire reel may be purchased as a microfilm for $6.00. In German.

PB L 70325-S. REICHSPATENTAMT, BERLIN. German patents: Class 12q, groups 1-6. Amines. (FIAT Microfilm Reel BB 90, Frames 1-1111, abstract cards) 1882-1941. 515 p. Price: Microfilm-$11.00 - Photostat-$35.00
Abstract cards of the individual items on the above reel, BB 90, PB L 70325, prepared by FIAT personnel in Germany. Each abstract card gives the German title and English translation, patent number, classification, date, patentee and inventor.

PB L 84124. REICHSPATENTAMT, BERLIN. German patents: Class 12r, group 1 and class 12q, group 38, Distillation of tar, and anthraquinone and derivatives. (FIAT Microfilm Reel AA 114, Frames 1-989) 1880-1941. 989 f. Price: Microfilm-$7.00 - Enlargement print-$100.00
This reel, prepared by FIAT investigators in Germany, contains 427 patents dated between 1880 and 1941. Class 12r, group 1, includes distillation and treatment of tar, class 12q, group 38, describes the production of anthraquinone and derivatives. The entire reel may be purchased as a microfilm for $7.00. In German.

PB L 84124-S. REICHSPATENTAMT, BERLIN. German patents: Class 12r, group 1 and class 12q, group 38, Distillation of tar, and anthraquinone and derivatives. (FIAT Microfilm Reel AA 114, Frames 1-989, abstract cards) 1880-1941. 427 p. Price: Microfilm-$7.00 - Photostat-$43.00
Abstract cards of the individual items on the above reel, AA 114, PB L 84124, prepared by FIAT personnel in Germany. Each abstract card gives the German title and English translation, patent number, classification, date, patentee and/or inventor.

PB L 70280. REICHSPATENTAMT, BERLIN. German patents: Class 29b, group 3; class 12q, group 29: Fiber manufacture; organic acids. (FIAT Microfilm Reel AA 103, Frames 327-1367) 1883-1941. 1040 f. Price: Microfilm-$6.00 - Enlargement print-$104.00
This reel, prepared by FIAT investigators in Germany, contains 482 patents dated between 1883 and 1941. Class 12q, group 29, includes phenol carbon acids, and class 29b, group 3, describes the manufacture of artificial textile fibers.

especially rayon, and processes for producing silk effects. The entire reel may be purchased as a microfilm for $6.00. In German.

PB L 70280-S. REICHSPATENTAMT, BERLIN. German patents: Class 29b, group 3; class 12a, group 29: Fiber manufacture: organic acids. (FIAT Microfilm Reel AA 103, Frames 327-1367, abstract cards) 1883-1941. 482 p.
Price: Microfilm-$10.00 - Photostat-$33.00
Abstract cards of the individual items on the above reel, AA 103, PB L 70280, prepared by FIAT personnel in Germany. Each abstract card gives the German title with English translation, patent number, classification, date, patentee and inventor.

ELECTRICAL MACHINERY. EQUIPMENT. AND SUPPLIES

PB L 19886-T. JUNG-KARPLER, CURT. Airplane antenna system. (Translation of Patent disclosure: Register 435). Jan 1945. 4 p. Price: Microfilm-$1.00 - Photostat-$1.00
For the original German patent application entry, see PB 19886, this Bibliography, vol. 2, p. 12. The translation was made by De Mornay-Budd, Inc., 475 Grand Concourse, New York 51, New York.

PB L 83988. REICHSPATENTAMT, BERLIN. Patent applications for generating equipment, converters, rectifiers, etc. (FIAT Microfilm Reel J 70, Frames 2917-3842) 1935-1945. 926 f. Price: Microfilm-$7.00 - Enlargement print-$94.00
This FIAT microfilm reel consists of 138 German patent applications for generating equipment, rectifiers, converters, motors and accessories as listed below. Individual items will be available as enlargement prints only; the entire reel may be purchased in microfilm form for $7.00. Please include PB and frame numbers when ordering individual items from this microfilm reel. In German.

Frames	Title	Price
2917-2943 PB L 83988	GREGORY, H. (Inventor). D-c motor. Ger. patent application G 103 640 dated Jun 6, 1941. In German. Drawings.	$4.00
2944-2947 PB L 83988	Retardation of a d-c series motor. Ger. patent application F 95 310 VIIId/21d dated Jun 7, 1944. In German. Drawing.	2.00
2948-2950 PB L 83988	FUNKE, A. (Inventor). Commutator with coated or galvanized segments. Ger. patent application F 94 469-21d dated Nov 18, 1943. In German.	2.00
2951-2956 PB L 83988	FELTEN & GUILLEAUME CARLSWERK A.G., COLOGNE-MÜHLHEIM. Damping and retarding measures. Ger. patent application F 94 425-21d dated Sep 29, 1943. In German.	2.00
2957-2962 PB L 83988	FISCHER, A. (Inventor). Electric motor with an external impeller in which the rotating part is made of a turbine impeller. Ger. patent application F 98 773 dated May 10, 1943. In German.	2.00
2963-2969 PB L 83988	FISCHER, A. (Inventor). Underwater generator unit consisting of a turbine and an electric motor. Ger. patent application F 93 792-21d dated May 10, 1943. In German.	2.00
2970-2975 PB L 83988	ALLGEMEINE ELEKTRICITÄTS-GESELLSCHAFT M.B.H., BERLIN. Electric motor with permanent magnets. Ger. patent application A 82 014 VIIId/21d dated Feb 15, 1937. In German. Drawing.	2.00
2976-2979 PB L 83988	Electrodynamic vibrator system of high efficiency, particularly for vibration tables. Ger. patent application B 202 059 dated Apr 5, 1943. In German. Drawing.	2.00
2980-2981 PB L 83988	APPARAT G.M.B.H., ESSLINGEN-NECKAR. Winding machine, particularly for stator coils. Ger. patent application A 97 098 dated Dec 17, 1942. In German.	2.00
2982-2989 PB L 83988	AUTO-UNION A.G., CHEMNITZ. Rotor without windings, for electromagnetic generators. Ger. patent application A 95 816-21d dated Jun 12, 1942. In German. Drawings.	2.00
2990-2994 PB L 83988	ALLGEMEINE ELEKTRICITÄTS-GESELLSCHAFT M.B.H., BERLIN. D-c series motor. Ger. patent application A 86 408 VIIId/21d dated Jan 17, 1941. In German. Diagram.	2.00
2995-3000 PB L 83988	AUTO-UNION A.G., CHEMNITZ. Pole piece mounting in generator housings, especially for motor vehicles. Ger. patent application A 90 268-21d dated Sep 22, 1939. In German. Drawing.	2.00
3001-3003 PB L 83988	FLEISCHMANN, K. and others (Inventors). Application of a known commutator principle to converters with permanent excitation. Ger. patent application F 90 786 VIIId/21d dated Nov 8, 1941. In German.	2.00
3004-3007 PB L 83988	GEHRING, J. (Inventor). Method for improving the efficiency of electric motors. Ger. patent application dated Jul 1, 1944. In German.	2.00
3008-3013 PB L 83988	GEFFEKEN, H. (Inventor). D-c generator without a commutator. Ger. patent application G 108 954 VIIId/21d dated Feb 22, 1944. In German.	2.00
3014-3025 PB L 83988	HÜBNER (JOHANNES), BERLIN. Liquid-filled electric motors, especially underwater motors. Ger. patent application H 166 937-21d dated Dec 4, 1941. In German. Drawings.	3.00
3026 PB L 83988	Altitude-proof carbon brushes. Ger. patent application H 164 914-21d dated Mar 20, 1941. In German.	2.00
3027-3031 PB L 83988	JANUS, W. (Inventor). Combination electric conductor. Ger. patent application J 74 179 dated Jan 21, 1943. In German.	2.00

3032-3050 PB L 83988 JANSEN, O. (Inventor). Stator for multipolar miniature motors. Ger. patent application J 74 202-21d dated Jan 30, 1943. In German. Drawing. 3.00

3051-3053 PB L 83988 JUNKERMANN (Inventor). Pole pieces. Ger. patent application J 75 603 dated Jul 26, 1943. In German. Drawing. 2.00

3054-3069 PB L 83988 APPARATE- UND MASCHINENFABRIK KARL DICKOW, GÖRLITZ. Arrangement on electric motors for operation in the presence of explosive liquids and gases. Ger. patent application A 93 452 dated May 20, 1941. In German. Drawings. 3.00

3070-3075 PB L 83988 ALLGEMEINE ELEKTRICITÄTS-GESELLSCHAFT M.B.H., BERLIN. Arrangement for speed regulation of electric motors. Ger. patent application A 75 652 VIIId/21d dated Mar 23, 1935. In German. Diagram. 2.00

3076-3078 PB L 83988 BECKER, W. (Inventor). Two-polar generators; motors and converters. Ger. patent application B 205 567-21d dated Mar 9, 1944. In German. Drawing. 2.00

3079-3083 PB L 83988 ASKANIA-WERKE A.G., BERLIN. D-c motor with double bell-type armature. Ger. patent application A 98 782-21d dated Oct 19, 1943. In German. Supplement to German patent A 95 364 VIId/21d. Drawings. 2.00

3084-3088 PB L 83988 BÖNING, P. (Inventor). Arrangement for changing a direct voltage or an alternating voltage into a higher direct voltage. Ger. patent application B 202 031-21d dated Apr 3, 1943. In German. Supplement to patent application B 197 874 VIIId/21d[1]. Diagrams. 2.00

3089-3092 PB L 83988 HAFEN, O. and others (Inventors). Electric differential motors. Ger. patent application dated May 12, 1944. In German. Drawings. 2.00

3093-3096 PB L 83988 HERRMANN, H. (Inventor). Electric motor. Ger. patent application dated Mar 21, 1944. In German. Drawings. 2.00

3097-3098 PB L 83988 Spring drive for dynamotors. Ger. patent application dated Mar 13, 1944. In German. Drawing. 2.00

3099-3100 PB L 83988 HEID & CO., SCHÖNTHAL-NEUSTADT, SAARPFALZ. Altitude-proof carbons, especially for electro technical application. Ger. patent application H 171 809 dated Jun 7, 1943. In German. Supplement to patent application H 170 434 VIIId/21d[1]. 2.00

3101-3106 PB L 83988 HUSEMANN, F. (Inventor). Arrangement for mounting motors, especially electric motors. Ger. patent application H 167 424-21d dated Jan 24, 1942. In German. Drawing. 2.00

3107-3110 PB L 83988 BOSCH (ROBERT) G.M.B.H., STUTTGART. Brush holder. Ger. patent application B 203 735-21d dated Aug 31, 1943. In German. Drawing. 2.00

3111-3113 PB L 83988 BOSCH (ROBERT) G.M.B.H., STUTTGART. Generator cover band. Ger. patent application B 203 736-21d dated Aug 31, 1943. In German. Drawing. 2.00

3114-3120 PB L 83988 BOSSERT, W. (Inventor). D-c motor without commutator or collector rings. Ger. patent application B 199 168-21d dated Aug 8, 1942. In German. Drawing. 2.00

3121-3128 PB L 83988 BUDERUS'SCHE EISENWERKE, WETZLAR. Manufacturing method for cylindrical housings for electric motors, generators and the like. Ger. patent application B 194 569-21d dated Jun 11, 1941. In German. Drawing. 2.00

3129-3133 PB L 83988 Method for producing an accurate perforation in permanent magnets of materials not easily machinable. Ger. patent application B 193 544-21d dated Mar 10, 1941. In German. Drawings. 2.00

3134-3135 PB L 83988 BOSCH (ROBERT) G.M.B.H., STUTTGART. Material for permanent magnets for electric motors. Ger. patent 496 308 VIIId/21d dated Mar 23, 1945. In German. 2.00

3136-3141 PB L 83988 Improved ventilation arrangement for electric motors. Ger. patent application dated Jul 19, 1944. In German. Drawings. 2.00

3142-3153 PB L 83988 BROWN, BOVERI & CIE, A.G., MANNHEIM. Arrangement for current transmission to periodically moving parts of electric motors. Ger. patent application B 191 206 dated Jul 13, 1940. In German. Supplement to patent application S 139 412 VIIId/21d[2]. 3.00

3154-3158 PB L 83988 CORNELIUS, H. (Inventor). Arrangement for starting electric motors. Ger. patent application C 57 158 dated Mar 3, 1942. In German. Drawing. 2.00

3159-3163 PB L 83988 Arrangement for the rectification of alternating currents. Ger. patent application K 167 687 dated Mar 7, 1943. In German. Diagrams. 2.00

3164-3184 PB L 83988 KRAMELIN, L. (Inventor). Rectifier arrangement. Ger. patent application K 167 590 dated Feb 2, 1943. In German. Drawing. 4.00

3185-3195 PB L 83988 ALLGEMEINE ELEKTRICITÄTS-GESELLSCHAFT M.B.H., BERLIN. Circuit arrangement for mechanical converters. Ger. patent application A 86 663 VIIId/21d dated Apr 30, 1938. In German. 3.00

3196-3202 PB L 83988 BROWN, BOVERI & CIE, A.G., MANNHEIM. Electric ship drive. Ger. patent application B 190 626-21d² dated May 4, 1940. In German. 2.00
Supplement to patent application B 186 335 VIIId/21d². Diagrams.

3203-3223 PB L 83988 ALLGEMEINE ELEKTRICITÄTS-GESELLSCHAFT M.B.H., BERLIN. Control arrangement for rotary frequency converters by means of grid-controlled vacuum tubes. Ger. patent application A 81 203 VIII21/21d dated Nov 26, 1936. In German. 4.00

3224-3228 PB L 83988 ALLGEMEINE ELEKTRICITÄTS-GESELLSCHAFT M.B.H., BERLIN. Three phase or polyphase transformer. Ger. patent application A 84 947 VIIId/21d² dated Nov 24, 1937. In German. 2.00
Supplement to patent application A 78 307-21d².

3229-3235 PB L 83988 ALLGEMEINE ELEKTRICITÄTS-GESELLSCHAFT M.B.H., BERLIN. Dry-type voltage transformer. Ger. patent A 81 873-21d² dated Jan 14, 1945. In German. 2.00
Supplement to patent application A 81 279-21d². Drawing.

3236-3240 PB L 83988 ALLGEMEINE ELEKTRICITÄTS-GESELLSCHAFT M.B.H., BERLIN. Axially cooled electric motor. Ger. patent application A 81 259 VIIId/21d¹ dated May 17, 1939. In German. 2.00
Drawing.

3241-3246 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Insulation for generator brush holders. Ger. patent application S 136 580 VIIId/21d¹ dated Mar 26, 1941. In German. 2.00
Drawing.

3247-3251 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Commutator for electric motors with glass insulation. Ger. patent application S 129 274 dated Oct 26, 1937. In German. 2.00
Drawings.

3252-3262 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Method for producing spools for generator coils. Ger. patent application S 129 110-21d dated Oct 12, 1937. In German. 3.00
Drawings.

3263-3269 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Transformer. Ger. patent application S 133 689 VIII/21d² dated Oct 11, 1940. In German. 2.00
Drawing.

3270-3276 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Arrangement for determination of load distribution in electric power stations. Ger. patent application S 133 521 VIIIb/21e dated Aug 18, 1938. In German. 2.00
Drawings.

3277-3280 PB L 83988 SIEMENS & HALSKE A.G., BERLIN. Arrangement for measuring small coercive forces of ferromagnetic bodies. Ger. patent application S 133 510 VIIId/21e dated Aug 18, 1938. In German. 2.00
Supplement to patent application S 117 386 VIIId/21e. Diagram.

3281-3288 PB L 83988 SIEMENS & HALSKE A.G., BERLIN. Safety collecting arc gap for d-c high-voltage generators according to Greinacher. Ger. patent application S 133 508 VIIId/21d³ dated Aug 15, 1938. In German. 2.00
Drawing.

3289-3298 PB L 83988 KOLLER, K. (Inventor). Generator. Ger. patent R 113 706 VIIId/21d¹ dated Aug 5, 1942. In German. 2.00
Drawing.

3299-3305 PB L 83988 RÖSE, H. (Inventor). Electrical multistage drive. Ger. patent application R 113 705 dated Aug 4, 1942. In German. 2.00
Drawing.

3306-3313 PB L 83988 WESTFÄLISCHE METALL-INDUSTRIE A.G., LIPPSTADT, LIPPSTADT. Method for compensation of temperature variations in a-c motors, especially in a-c generators. Ger. patent application W 113 941-21d dated Oct 4, 1943. In German. 2.00
Drawing.

3314-3318 PB L 83988 SIEMENS & HALSKE A.G., BERLIN. Brush collectors on generators. Ger. patent application S 138 708-21d dated Sep 23, 1939. In German. 2.00
Drawing.

3319-3328 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Arrangement for automatic regulation of a-c circuits or rectifiers. Ger. patent application S 138 731 VIIId/21d² dated Nov 21, 1941. In German. 2.00
Diagrams.

3329-3343 PB L 83988 SIEMENS-SCHUCKERTWERKE AG., BERLIN. Electric motor. Ger. patent application S 139 660 VIIId/21d¹ dated Dec 28, 1939. In German. 3.00
Drawings.

3344-3347 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Oil-filled transformer, especially oil-poor instrument transformer. Ger. patent application S 140 826 VIIId/21d² dated Apr 23, 1940. In German. 2.00

3348-3353 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Arrangement for the generation of high d-c voltages. Ger. patent application S 145 834 VIIId/21d² dated Jun 20, 1941. In German. 2.00
Diagram.

3354-3356 PB L 83988 TELEFUNKEN G.M.B.H., BERLIN. Arrangement for halving low frequencies. Ger. patent application T 39 731-21d² dated Nov 6, 1943. In German. 2.00

3357-3361 PB L 83988 STEIDINGER, A. (Inventor). Commutator for miniature motors. Ger. patent application St 62 858 dated Mar 11,

1943. In German. 2.00
Drawings.

3362-3365 PB L 83988 TELEFUNKEN G.M.B.H., BERLIN. Circuit arrangement for tuned reed rectifiers. Ger. patent application T 52 665 dated Aug 7, 1939. In German. 2.00

3366-3367 PB L 83988 ZELLER, A. (Inventor). Circuit for pole-reversing a-c generators. Ger. patent application Z 27 940 dated Aug 9, 1940. In German. 2.00

3368-3377 PB L 83988 ZIEGENBEIN, W. (Inventor). Commutators for converters. Ger. patent application Z 25 363 dated Jan 7, 1939. In German. 2.00
Diagrams.

3378-3382 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Cooled brush holder with two brushes. Ger. patent application S 157 351-21d[1] dated Sep 22, 1943. In German. 2.00
Drawings.

3383-3391 PB L 83988 LIST (Inventor). Arrangement for amplitude regulation in electric motors. Ger. patent application L 104 599 dated Jun 14, 1941. In German. 2.00
Drawing.

3392-3396 PB L 83988 Load switching arrangement, especially for bleeder transformers. Ger. patent application L 112 191 VIIId/21d[2] dated Jun 16, 1943. In German. 2.00
Supplement to patent application L 111 919 VIIId/21d[2]. Drawings.

3397-3402 PB L 83988 Arrangement for voltage stabilization on the terminals of a-c generators. Ger. patent application L 112 192 VIIId/21d[2] dated Jun 16, 1943. In German. 2.00
Diagram.

3403-3407 PB L 83988 Arrangement for noise reduction in d-c generators. Ger. patent application L 112 808 VIIId/21d[1] dated Oct 8, 1943. In German. 2.00
Drawing.

3408-3419 PB L 83988 SCHMIDTHAMMER, A. (Inventor). Method and arrangement for the production of carbon brushes with pressed-in leads. Ger. patent application dated Jun 14, 1944. In German. 3.00
Drawings.

3420-3424 PB L 83988 SCHMID, W. (Inventor). Arrangement for automatic control of reciprocating parts. Ger. patent application Sch 129 418 VIIId/21c dated Jun 12, 1944. In German. 2.00

3425-3433 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Rotary converter with two or more slip rings. Ger. patent application S 144 218 VIIId/21d[1] dated Feb 27, 1941. In German. 2.00
Drawings.

3434-3436 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Choke coil. Ger. patent application S 145 256 VIIId/21d[2] dated May 6, 1941. In German. 2.00
Drawing. Supplement to patent application S 130 010 VIIId/21d[2].

3437-3442 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Torsion proof mounting of metallic parts on rotating shafts. Ger. patent application S 152 707 VIIIa/21d[2] dated Nov 2, 1942. In German. 2.00
Drawings.

3443-3445 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Permanent magnet pole piece. Ger. patent application S 152 700 VIIId/21d[1] dated Oct 31, 1942. In German. 2.00
Drawing.

3446-3452 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. A-c switching arrangement with synchronously operating contacts. Ger. patent application S 142 315 VIIId/21d[2] dated Sep 17, 1940. In German. 2.00
Supplement to patent application S 120 828 VIIId/21d[2]. Diagrams.

3453-3456 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Coil mounting for electric motors. Ger. patent application S 158 556 VIIId/21d[1] dated Jan 21, 1944. In German. 2.00

3457-3459 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Method for mounting rectangular cores with proportionate dimensions of 1:1,5 or more for large transformers. Ger. patent application S 159 667 VIIId/21d[2] dated May 10, 1944. In German. 2.00
Supplement to patent application S 157 881 VIIId/21d[1].

3460-3461 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Miniature motor. Ger. patent application S-21d[1] dated May 10, 1944. In German. 2.00

3462-3472 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Three-phase current rectifier system. Ger. patent application S 159 659 VIIId/21d[2] dated May 10, 1944. In German. 3.00
Drawings.

3473-3482 PB L 83988 Method of automatic load-dependent regulation of synchro machines. Ger. patent application U 15 791 dated Nov 9, 1942. In German. 2.00
Drawings.

3483-3494 PB L 83988 Rotary field synchro machine. Ger. patent application U 15 780 dated Oct 30, 1942. In German. 3.00
Drawings.

3495-3499 PB L 83988 STEIDINGER, A. (Inventor). Manufacturing method for small and miniature motors. Ger. patent application St 62 895 dated Mar 24, 1943. In German. 2.00
Drawings.

3500-3508 PB L 83988 TELEFUNKEN G.M.B.H., BERLIN. Single armature converter. Ger. patent application T 51 778-21d[1] dated Feb 11, 1939. In German. 2.00
Drawings.

3509-3514 PB L 83988 TELEFUNKEN G.M.B.H., BERLIN. Circuit arrangement for the generation of a-c voltages with continuous phase shifting by 180°. Ger. patent application T 60 361 VIIId/21d[2] dated Apr 24, 1944. In German. Diagrams. 2.00

3515-3529 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Control arrangement for a frequency converter operated by grid-controlled discharge gaps. Ger. patent application S 140 514 dated Mar 18, 1940. In German. Diagrams. 3.00

3530-3534 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Shunt motor for connection to d-c or a-c generators. Ger. patent application S 140 537-21d[1] dated Mar 21, 1940. In German. Drawing. 2.00

3535-3542 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Vibrator. Ger. patent application S 140 555 21d[1] dated Mar 21, 1940. In German. Drawings. 2.00

3543-3554 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Manufacturing method for assemblies for electric motors. Ger. patent application S 140 564 VIIId/21d[1] dated Mar 26, 1940. In German. Drawing. 3.00

3555-3564 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Arrangement for deenergising excitation circuits in synchro motors. Ger. patent application S 139 883 dated Jan 22, 1940. In German. Drawing. 2.00

3565-3575 PB L 83988 RHEINMETALL-BORSIG A.G., BERLIN. D-c generator for symmetrically variable voltages from zero to positive or negative maximum valves. Ger. patent application R 116 390-21d[1] dated Jun 15, 1943. In German. Drawing. 3.00

3576-3586 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Control arrangement for inverters. Ger. patent application S 141 553 VIIId/21d dated Jul 3, 1940. In German. Diagrams. 3.00

3587-3593 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Arrangement for the determination of stresses in parts of motors, particularly commutators. Ger. patent application S 140 038 VIIId/21d[1] dated Feb 7, 1940. In German. Drawing. 2.00

3594-3598 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Arrangement for increasing the range of control devices, especially Ward-Leonard converters with wide regulation range. Ger. patent application S 149 094-21d dated Nov 27, 1940. In German. Drawing. 2.00

3599-3611 PB L 83988 RHEINMETALL-BORSIG A.G., BERLIN. Rotary converter as d-c control generator for symmetrical voltage regulation. Ger. patent application R 116 140-21d[1] dated Jun 23, 1943. In German. Drawing. 3.00

3612-3614 PB L 83988 RINGSDORFF-WERKE K.G., MEHLEM-RHEIN. Carbon brushes. Ger. patent application R 115 717-21d[1] dated Mar 23, 1943. In German. Drawings. 2.00

3615-3619 PB L 83988 RHEINMETALL-BORSIG A.G., BERLIN. Arrangement for infinite regulation of d-c motors, especially with Ward-Leonard control. Ger. patent application R 115 411 VIIId/21d dated Feb 19, 1943. In German. Supplement to patent application R 115 260 VIIId/21d. Drawing. 2.00

3620-3625 PB L 83988 RHEINMETALL-BORSIG A.G., BERLIN. Rotary converter with infinite regulation of secondary voltage. Ger. patent application R 115 420 VIIId/21d[2] dated Feb 22, 1943. In German. Supplement to patent application R 115 267 VIIId/21d[2]. 2.00

3626-3629 PB L 83988 Encased electric motor. Ger. patent application R 116 196-21d[1] dated May 20, 1943. In German. Drawing. 2.00

3630-3640 PB L 83988 ROHRBACHER LEDERFABRIK JOS. POESCHL'S SÖHNE, ROHRBACH. Electric motor. Ger. patent application R 115 195-21d[1] dated Jan 25, 1943. In German. Drawings. 3.00

3641-3648 PB L 83988 RUSS-ELEKTROOFEN K.G., BERLIN. Transformer, especially for low-frequency induction furnaces. Ger. patent application R 115 200 dated Jan 23, 1943. In German. Drawing. 2.00

3649-3657 PB L 83988 Rotary converter. Ger. patent application R 116 574 dated Jul 3, 1943. In German. Drawings. 2.00

3658-3663 PB L 83988 Electric generator. Ger. patent application R 110 859 VIIId/21d[1] dated Aug 22, 1941. In German. Drawing. 2.00

3664-3666 PB L 83988 Miniature electric motor. Ger. patent application R 111 378-21d[1] dated Oct 30, 1941. In German. Drawing. 2.00

3667-3672 PB L 83988 RITSCHER G.M.B.H., BERLIN. Current supply arrangement for small motors. Ger. patent application R 111 376 VIIId/21d[1] dated Feb 15, 1945. In German. Drawing. 2.00

3673-3679 PB L 83988 ALLGEMEINE ELEKTRICITÄTS-GESELLSCHAFT M.B.H., BERLIN. Arrangement for lowering frequency by means of a series connection of a-c circuits. Ger. patent application A 83 221 VIIId/21d[2] dated Jun 7, 1937. In German. 2.00

Supplement to patent application A 83 161 VIIId/21d². Diagrams.

3680-3682 PB L 83988 MILGENBERG, O. (Inventor). Circuits for starting and operation of conventional a-c motors. Ger. patent application H 157 956 VIIId/21d dated Jun 3, 1942. In German. 2.00
Diagrams.

3683-3685 PB L 83988 MILGENBERG, O. (Inventor). Circuits for synchronous condensers operated as three-phase motors. Ger. patent application H 157 956 dated Dec 9, 1938. In German. 2.00
Diagrams.

3686-3687 PB L 83988 Contact converter for currents of at least six phases. Ger. patent application L 114 240 VIIId/21d² dated Apr 1, 1944. In German. 2.00

3688-3695 PB L 83988 LICENTIA PATENT-VERWALTUNGS G.M.B.H., BERLIN. Mechanical converter. Ger. patent application L 114 234 VIIId/21d² dated Apr 1, 1944. In German. 2.00

3696-3698 PB L 83988 LICENTIA PATENT-VERWALTUNGS G.M.B.H., BERLIN. Transformer with auxiliary windings. Ger. patent application L 114 236 VIIId/21d² dated Apr 1, 1944. In German. 2.00
Drawing.

3699-3702 PB L 83988 LICENTIA PATENT-VERWALTUNGS G.M.B.H., BERLIN. Power transformer with transverse regulation. Ger. patent application L 114 235 VIIId/21d² dated Mar 31, 1944. In German. 2.00
Drawing.

3703-3711 PB L 83988 WILSHAUS, W. (Inventor). Circuit arrangement for contactors. Ger. patent application W 111 869 dated Oct 20, 1942. In German. 2.00
Diagrams.

3712-3714 PB L 83988 Insulator impregnated armature for electrical equipment and manufacturing methods. Ger. patent application R 108 377 VIId/21d¹ dated Aug 28, 1943. In German. 2.00

3715-3717 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Insulation for coils. Ger. patent application S 145 222 VIIId/21d² dated Apr 30, 1941. In German. 2.00

3718-3721 PB L 83988 VOIGT & HAEFFNER A.G., FRANKFURT-MAIN. Manufacturing method for rectangular cores. Ger. patent application V 40 164 dated Jun 25, 1943. In German. 2.00
Drawings.

3722-3730 PB L 83988 WINKELMANN, W. (Inventor). Arrangement for generation or rectification of alternating currents. Ger. patent application W 114 367 VIIId/21d² dated Jan 3, 1944. In German. 2.00
Diagrams.

3731-3733 PB L 83988 WINKELMANN, W. (Inventor). Arrangement for packing, aligning, pressing and riveting of laminated magnet cores. Ger. patent application W 114 365 VIIId/21d¹ dated Dec 18, 1943. In German. 2.00
Drawing.

3734-3739 PB L 83988 Operating method for inverters. Ger. patent application L 113 997 VIIId/21d² dated Feb 24, 1944. In German. 2.00
Diagrams.

3740-3751 PB L 83988 Electric motor. Ger. patent application F 63 122-21d dated May 26, 1943. In German. 3.00
Drawings.

3752-3757 PB L 83988 SIEMENS & HALSKE A.G., BERLIN. Arrangement for tapping a constant d-c voltage from an a-c circuit with constantly varying voltage and frequency. Ger. patent application S 156 802 dated Aug 5, 1943. In German. 2.00
Diagram.

3758-3765 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Manufacturing method for commutators. Ger. patent application S 156 960-21d¹ dated Aug 19, 1943. In German. 2.00
Drawings.

3766-3768 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Series connected submerged motors. Ger. patent application S 156 959 dated Aug 19, 1943. In German. 2.00
Drawing.

3769-3780 PB L 83988 Method for transducing mechanical energy into direct current and vice versa. Ger. patent application T 56 157-21d¹ dated Sep 8, 1941. In German. 3.00
Drawings.

3781-3792 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Arrangement for a contact converter. Ger. patent application S 143 931 dated Feb 1, 1941. In German. 3.00
Drawings.

3793-3797 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Armature winding for rotary converters operated by a-c of higher frequency, especially of 50 cps. Ger. patent application S 142 196 dated May 13, 1942. In German. 2.00
Drawing.

3798-3805 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Synchro arrangement for induction motors. Ger. patent application S 139 875 VIII/21d2 dated Jan 20, 1940. In German. 2.00

3806-3810 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Electric motor with encased stator. Ger. patent application S 141 111 VIIId/21d¹ dated May 21, 1940. In German. 2.00
Supplement to patent application S 126 556 VIIId/21d¹. Drawing.

3811-3815 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Arrangement for control of mechanical stresses in commutators. Ger. patent application S 141 064 IXb/42k dated May 16, 1940. In German. 2.00

Supplement to patent application S 140 038 IXb/42k. Drawing.

3816-3819 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Arrangement for the determination of mechanical stresses on commutators. Ger. patent application S 141 069 IXb/42k dated May 16, 1940. In German. 2.00
Supplement to patent application S 140 038 IXb/42k. Drawing.

3820-3827 PB L 83988 SIEMENS-SCHUCKERTWERKE A.G., BERLIN. Method for the production of a two-layer a-c coil. Ger. patent application S 141 473 dated Jun 27, 1940. In German. 2.00
Drawing.

3828-3832 PB L 83988 SACHSENWERK LICHT- UND KRAFT A.G., NIEDERSEDLITZ-DRESDEN. Electric motor. Ger. patent application S 142 418 VIIId/21d[1] dated Sep 27, 1940. In German. 2.00
Supplement to patent application S 136 634 VIIId/21d[1]. Drawing.

3833-3837 PB L 83988 Arrangement for converters. Ger. patent application L 114 493 VIIId/21d[2] dated May 3, 1944. In German. 2.00
Diagram.

3838-3842 PB L 83988 Contact converter. Ger. patent L 114 513 VIIId/21d[2] dated May 11, 1944. In German. 2.00

MACHINERY (EXCEPT ELECTRICAL)

PB L 84147. REICHSPATENTAMT, BERLIN. German patents: Class 8d, groups 6, 7 and 9, Laundry, including finishing (mechanical part). (FIAT Microfilm Reel BB 61, Frames 9702-10721) 1878-1941. 1020 f. Price: Microfilm-$7.00 - Enlargement print-$103.00
This reel, prepared by FIAT investigators in Germany, contains 324 patents dated between 1878 and 1941. Class 8d, groups 6,7, and 9,includes cylindrical washing machines, centrifugal driers for laundry and miscellaneous washing machines. The entire reel may be purchased as a microfilm for $7.00. In German.

PB L 84147-S. REICHSPATENTAMT, BERLIN. German patents: Class 8d, groups 6, 7 and 9, Laundry, including finishing (mechanical part). (FIAT Microfilm Reel BB 61, Frames 9702-10721, abstract cards) 1878-1941. 324 p. Price: Microfilm-$7.00 - Photostat-$33.00
Abstract cards of the individual items on the above reel, BB 61, PB L 84147, prepared by FIAT personnel in Germany. Each abstract card gives the German title and English translation, patent number, classification, date, patentee and/or inventor.

PB L 84117. REICHSPATENTAMT, BERLIN. German patents: Class 8d; groups 6, 8, 10 and 11, Laundering equipment. (FIAT Microfilm Reel BB 60, Frames 8673-9701) 1878-1941. 1029 f. Price: Microfilm-$7.00 - Enlargement print-$104.00
This reel, prepared by FIAT investigators in Germany, contains 342 patents dated between 1878 and 1941. Class 8d, groups 6, 8, 10 and 11, includes cylindrical washing machines, centrifugal driers for laundry work, stampers and pounders, washboards, wash tubs and stands and laundry treatment in general. The entire reel may be purchased as a microfilm for $7.00. In German.

PB L 84117-S. REICHSPATENTAMT, BERLIN. German patents: Class 8d; groups 6, 8, 10 and 11, Laundering equipment. (FIAT Microfilm Reel BB 60, Frames 8673-9701, abstract cards) 1878-1941. 342 p. Price: Microfilm-$7.00 - Photostat-$35.00
Abstract cards of the individual items on the above reel, BB 60, PB L 84117, prepared by FIAT personnel in Germany. Each abstract card gives the German title with English translation, patent number, classification, date, patentee and/or inventor.

PB L 84161. REICHSPATENTAMT, BERLIN. German patents: Class 8d, groups 12-17, Laundering appurtenances. (FIAT Microfilm Reel BB 63, Frames 11828-12846) 1880-1941. 1019 f. Price: Microfilm-$7.00 - Enlargement print-$103.00
This reel, prepared by FIAT investigators in Germany, contains 341 patents dated between 1880 and 1941. Class 8d, groups 12-17, includes wringers, clothes lines, clothes pins, drying apparatus, stretching and drying apparatus, and starching machines. The entire reel may be purchased as a microfilm for $7.00. In German.

PB L 84161-S. REICHSPATENTAMT, BERLIN. German patents: Class 8d, groups 12-17, Laundering appurtenances. (FIAT Microfilm Reel BB 63, Frames 11828-12846, abstract cards) 1880-1941. 341 p. Price: Microfilm-$7.00 - Photostat-$35.00
Abstract cards of the individual items on the above reel, BB 63, PB L 84161, prepared by FIAT personnel in Germany. Each abstract card gives the German title with English translation, patent number, classification, date, patentee and/or inventor.

PB L 84160. REICHSPATENTAMT, BERLIN. German patents: Class 8d, groups 17-19, Laundry machines. (FIAT Microfilm Reel BB 64, Frames 12847-13576) 1877-1937. 730 f. Price: Microfilm-$7.00 - Enlargement print-$74.00
This reel, prepared by FIAT investigators in Germany, contains 241 patents, dated between 1877 and 1937. Class 8d, groups 17 and 18, includes starching machines and laundry calenders. Only one patent of class 8d, group 18, is included which covers a laundry mangle. The entire reel may be purchased as a microfilm for $7.00. In German.

PB L 84160-S. REICHSPATENTAMT, BERLIN. German patents: Class 8d, groups 17-19, Laundry machines. (FIAT Microfilm Reel BB 64, Frames 12847-13576, abstract cards) 1877-1937. 241 p. Price: Microfilm-$7.00 - Photostat-$25.00
Abstract cards of the individual items on the above reel, BB 64, PB L 84160, prepared by FIAT personnel in Germany. Each abstract card gives the German title and English translation, patent number, classification, date, patentee and/or inventor.

TEXTILES AND TEXTILE PRODUCTS

PB L 84119. REICHSPATENTAMT, BERLIN. German patents: Class 8a, groups 25, 26, 27, 29, and 30, Treatment of textiles. (FIAT Microfilm Reel AA 62, Frames 7334-8221) 1877-1942. 888 f. Price: Microfilm-$7.00 - Enlargement print-$90.00
This microfilm reel,prepared by FIAT in Germany from the files of the German Patent Office, contains 278 patents in Class 8a, groups 25, 26, 27, 29, and 30, bleaching, dyeing, mercerizing, impregnating, washing, and fulling of textile fibers, yarn, fabrics, etc. The patents are dated between 1877 and 1942. The entire reel is available as a microfilm for $7.00 or as enlargement prints for $90.00. In German.

PB L 84119-S. REICHSPATENTAMT, BERLIN. German patents: Class 8a, groups 25, 26, 27, 29, and 30. Treatment of textiles. (FIAT Microfilm Reel AA 62, Frames 7334-8221, abstract cards) 1877-1942. 278 p. Price: Microfilm-$7.00 - Photostat-$28.00
These are abstract cards for the above FIAT microfilm reel, AA 62, PB L 84119, prepared by FIAT personnel in Germany. Each abstract card gives the German title with an English translation, patent number, classification, date, patentee and/or inventor.

PB L 84120. REICHSPATENTAMT, BERLIN. German patents: Class 8a, groups 31-36; Class 8d, group 21; and Class 8b, group 1: Textile processing. (FIAT Microfilm Reel AA 65, Frames 8222-9241) 1877-1941. 1020 f.
Price: Microfilm-$7.00 - Enlargement print-$103.00
This microfilm reel, prepared by FIAT investigators in Germany, contains 323 patents, dated between 1877 and 1941. Class 8a, groups 31-36, patents deal with fulling, squeezing and pressing fibers, fiber bands, yarn, fabrics and knit goods, rollers for dyeing, wringing, sizing as well as miscellaneous features of the mechanical part of dyeing spools, spindles, yarn supports, reels, etc. Only one patent of Class 8d, group 21, is concerned with irons and appurtenances. The latter part of the reel includes Class 8b, group 1, and covers machinery for drying fabrics without stretching action. The entire reel may be purchased as a microfilm for $7.00. In German.

PB L 84120-S. REICHSPATENTAMT, BERLIN. German patents: Class 8a, groups 31-36; Class 8d, group 21; and Class 8b, group 1: Textile processing. (FIAT Microfilm Reel AA 65, Frames 8222-9241, abstract cards) 1877-1941. 323 p. Price: Microfilm-$7.00 - Photostat-$33.00
Abstract cards of the individual patents on the above reel, AA 65, PB L 84120, prepared by FIAT personnel in Germany. Each abstract card gives the German title with an English translation, patent number, classification, date, patentee and inventor.

PB L 70328. REICHSPATENTAMT, BERLIN. German patents: Class 29a, groups 5-6, Fibers manufacture. (FIAT Microfilm Reel BB 97, Frames 3056-3815) 1911-1941. 759 f. Price: Microfilm-$6.00 - Enlargement print-$76.00
This reel, prepared by FIAT investigators in Germany, contains 239 patents dated between 1911-1941. Five patents of class 29a, group 5, refer to extraction of peat fibers; class 29a, group 6, pertains to the manufacture of rayon. The entire reel may be purchased as a microfilm for $6.00. In German.

PB L 70328-S. REICHSPATENTAMT, BERLIN. German patents: Class 29a, groups 5-6, Fibers manufacture. (FIAT Microfilm Reel BB 97, Frames 3056-3815, abstract cards) 1911-1941. 239 p. Price: Microfilm-$5.00 - Photostat-$16.00
Abstract cards of the individual items on the above reel, BB 97, PB L 70328, prepared by FIAT personnel in Germany. Each abstract card gives the German title with an English translation, patent number, classification, date, patentee and inventor.

PB L 84146. REICHSPATENTAMT, BERLIN. German patents: Class 29a, group 6 and Class 29b, group 2, Rayon manufacture, and processing of vegetable fibers. (FIAT Microfilm Reel BB 100, Frames 5719-6696) 1878-1943. 978 f. Price: Microfilm-$7.00 - Enlargement print-$99.00
This reel, prepared by FIAT investigators in Germany, contains 373 patents, dated between 1878 and 1943. Class 29a, group 6, includes the production of rayon; class 29b, group 2, the chemical preparation and cleaning of vegetable textile fibers. The entire reel may be purchased as a microfilm for $7.00. In German.

PB L 84146-S. REICHSPATENTAMT, BERLIN. German patents: Class 29a, group 6 and Class 29b, group 2, Rayon manufacture, and processing of vegetable fibers. (FIAT Microfilm Reel BB 100, Frames 5719-6696, abstract cards) 1878-1943. 373 p. Price: Microfilm-$7.00 - Photostat-$38.00
Abstract cards of the individual items on the above reel, BB 100, PB L 84146, prepared by FIAT personnel in Germany. Each abstract card gives the German title with English translation, patent number, classification, date, patentee and/or inventor.

PB L 84136. REICHSPATENTAMT, BERLIN. German patents: Class 76b, groups 13, 23, 24, 25, 27 and 29, Treatment of textile fibers: textile machinery. (FIAT Microfilm Reel BB 103, Frames 9693-9999, 1-689) 1877-1941. 997 f. Price: Microfilm-$7.00 - Enlargement print-$101.00
This microfilm reel, prepared by FIAT in Germany from the files of the German Patent Office, contains 315 patents in Class 76b, groups 13, 23, 24, 25, 27, and 29, covering preliminary treatment of textile fibers. Carding machines, web dividers, rubbing leather, slubbing cards, stretching, and stretching machines are included. The patents are dated between 1877 and 1941. The entire reel is available as a microfilm for $7.00 or as enlargement prints for $101.00. In German.

PB L 84136-S. REICHSPATENTAMT, BERLIN. German patents: Class 76b, groups 13, 23, 24, 25, 27 and 29, Treatment of textile fibers: textile machinery. (FIAT Microfilm Reel BB 103, Frames 9693-9999, 1-689, abstract cards) 1877-1941. 315 p. Price: Microfilm-$7.00 - Photostat-$32.00
These are abstract cards for the above FIAT microfilm reel, BB 103, PB L 84136, prepared by FIAT personnel in Germany. Each abstract card gives the German title with an English translation, patent number, classification, date, patentee and/or inventor.

PB L 84148. REICHSPATENTAMT, BERLIN. German patents: Class 76b, groups 36 and 37; class 76c, groups 1-3, Conveying apparatus and textile machinery. (FIAT Microfilm Reel BB 105, Frames 1600-2508) 1877-1940. 909 f. Price: Microfilm-$7.00 - Enlargement print-$92.00
This reel, prepared by FIAT investigators in Germany, contains 273 patents dated between 1877 and 1940. Class 76b, groups 36 and 37, includes conveying apparatus and means for disposal of wastes. The latter part of the reel includes class 76c, groups 1-3, covering roving frames, fly spinning and twisting machines and flyers. The entire reel may be purchased as a microfilm for $7.00. In German.

PB L 84148-S. REICHSPATENTAMT, BERLIN. German patents: Class 76b, groups 36 and 37; class 76c, groups 1-3, Conveying apparatus and textile machinery. (FIAT Microfilm Reel BB 105, Frames 1600-2508, abstract cards) 1877-1940. 273 p. Price: Microfilm-$7.00 - Photostat-$28.00
Abstract cards of the individual items on the above reel, BB 105, PB L 84148, prepared by FIAT investigators in Germany. Each abstract card gives the German title with English translation, patent number, classification, date, patentee and inventor.

PB L 84135. REICHSPATENTAMT, BERLIN. German patents: Class 76b, groups 28, 29, 30, 31, 33, 34, and 35, Treatment of textile fibers: Textile machinery. (FIAT Microfilm Reel BB 104, Frames 690-1599) 1877-1938. 910 f. Price: Microfilm-$7.00 - Enlargement print-$92.00
This microfilm reel prepared by FIAT in Germany from the files of the German Patent Office, contains 264 patents in Class 76b, groups 28, 29, 30, 31, 33, 34, and 35, dealing with preliminary treatment of textile fibers. Stretching processes, stretching machines, combing machines, devices for combing machines, and cleaning devices are included. The patents are dated between 1877 and 1938. The entire reel is available as a microfilm for $7.00 or as enlargement prints for $92.00. In German.

PB L 84135-S. REICHSPATENTAMT, BERLIN. German patents: Class 76b, groups 28, 29, 30, 31, 33, 34, and 35, Treatment of textile fibers: Textile machinery. (FIAT Microfilm Reel BB 104, Frames 690-1599, abstract cards) 1877-1938. 264 p. Price: Microfilm-$7.00 - Photostat-$27.00
These are abstract cards for the above FIAT microfilm reel, BB 104, PB L 84135, prepared by FIAT personnel in Germany. Each abstract card gives the German title with an English translation, patent number, classification, date, patentee and/or inventor.

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PB L 79428. BAIRD, W. Vulcanization accelerators and miscellaneous polymer auxiliary products; Manufacture by I. G. Farbenindustrie. (BIOS Final Rept 1150, Item 22) Oct 1946. 29 p. Price: Mimeo-$1.00

Data have been provided on the composition and manufacture of vulcanization accelerators and some miscellaneous auxiliary products of interest to the rubber and plastics industries, made by I. G. Farbenindustrie at Leverkusen, Elberfeld and Uerdingen factories. The accelerators are of the Vulcacit series. The other products considered are Attramentol, Covulsan PAL and B, Desmodur TH and O, Desmophens, Diproxyd, Porofor N, 476, and 505 A, Renacit I, II, and III, Stabilisator P, and Vulcanal B. The information on accelerators should be considered supplementary to that given in BIOS Final Report 661, "Manufacture of vulcanization accelerators and antioxidants by I. G. Farbenindustrie A. G., Leverkusen," PB 47735, v. 4, p. 113, this Bibliography.

PB L 85438. BERGEN, WERNER VON. The German woolen and worsted industry in World War II. (QM Textile Series Rept 30) Apr 1947. 185 p. Price: Mimeo-$5.00

Information on German woolen and worsted materials, with special reference to items made from wool which have military significance, has been combined in this report for use by the Quartermaster Corps and interested members of the industry. Part I, "Military items," deals with the German standard army uniform cloth, blankets, socks, pressed felts, aviation underwear, and various army fabrics. Part II, "Research to improve military items," contains: (1) Influence of dyeing methods on the wear of uniform cloth; (2) study on the scouring and fulling operation to improve wear; (3) improvement of wear through the use of protecting agents in dyeing; (4) the hygienic properties of cloth; (5) testing of worsted yarn for wear; and (6) increasing wearability of textiles containing wool by "Protectol MT." Part III, "Manufacturing," discusses pulling wool by the use of enzymes, wool scouring, wool grease recovery and other byproducts recovery, dyeing and finishing, non-felting processes, and the German carpet industry. Part IV, "Machinery," describes woolen card at Thomas Scheuffelen A. G., Ebersbach (Fils), Wurttemberg, and Gessner ring spinning frame for woolen system. Part V is concerned with German wool grade standards.

PB L 78712. CRAIGHEAD, C. M. and others. Survey on welding of aluminum and magnesium alloys. Part 2, final report. Jan 1947. 303 p. Price: Mimeo-$8.00

This report, by the Battelle Memorial Institute, to the Chief of Ordnance, War Department, presents the results of a survey of available information on the welding of aluminum- and magnesium-base alloys, such as may be utilized in ordnance material. The object of the survey was to indicate the possibilities and limitations of welding, and allied processes, to the fabrication of heavy-gage light alloys, and to indicate the fundamental problems which require further experimental investigation. The survey of the literature appears as a bibliography in the appendix of this report. The coverage of recent literature includes foreign articles up to July 1946, and American literature up to and including September 1946. Tables are included.

PB L 79315. FRY, H. and others. Anti-reflection surfaces on glass, optical cements and etching resist for fine lines. (BIOS Final Rept 1183, Item 9) n. d. 37 p. Price: Mimeo-$1.25

This report consists of seven sections. Sections I and II describe in detail the centrifugal method for coating glass surfaces as used at the Leitz works, Wetzlar and at the Askania works, Berlin. Section III describes the high vacuum method as used by Leitz with illustrations and sketches included. Section IV reports on the manufacture of optical cement "Plexigum" KP.709 and Section V reports on the use of "Plexigum" KP.709. Section VI gives information concerning the I. G. Farben cement HO/105 and Section VII gives information obtained from the Askania Works, Berlin, on etching resist for fine lines.

PB L 80752. RANDALL, FRANCIS E. and BARR, MELVIN J. Survey of body size of Army personnel, male and female. Work phase I: Body dimensions of Army males. (QM Climatic Res Lab Rept 122) Jul 1947. 45 p. Price: Mimeo-$1.50

This report represents the first of a series which describes in detail the anthropometry of military males and females. Two types of considerations are presented, metric and morphological. The metric describes body sizes; the morphological, the body types. The field survey of the anthropometry of males began early in May 1946 and continued at six different separation centers until November 14, 1946 with a total of 105,062 men measured. Of these, 96,381 were being separated from the service, or re-enlisting; the rest were just entering the Army and had no previous military service. Of the total, 6,406 were negro or white-negro mixture. Physical types were recorded photographically on 49,500 officers and men studied in the survey. The distribution of the total population measured has been compared with Census and Selective Service distribution and found to show discrepancies only in the West South Central group and the negro series, which are both disproportionately small. However, the data are considered valid for statistical purposes to establish specifications for clothing sizing and tariffing and determination of space requirements of personnel. Photographs of equipment and measuring techniques are included. (See PB L 80751, below.)

PB L 80751. RANDALL, FRANCIS E. Survey of body size of Army personnel, male and female. Work phase IV: Body dimensions of Army females. (QM Climatic Res Lab Rept 123) Jul 1947. 34 p. Price: Mimeo-$1.00

This report is one of a series of six which will describe in detail the anthropometry of military males and females. (The first report, "Body dimensions of Army males" (PB L 80752) has already been listed in this Bibliography, see above.) The data presented in this report, "Body dimensions of Army females," concern the methods of measurement and the general consideration of the population measured. Three teams of WAC personnel were trained in anthropometric techniques. Standard anthropometric and tailoring dimensions, totalling 64, were taken on 8,859 female subjects, 8,459 white and 400 non-white, all having had previous military experience. Preliminary analyses of the data are reported in an appendix. These data show that Army WAC enlisted women tend to be shortest and lightest, WAC officers tend to be tallest and heaviest, as well as oldest, and Army nurses intermediate to the other two groups in stature and weight. Figures on regional differences for each group are given. These data indicate variabilities which may be expected to occur in native-born female populations of the United States.

PB L 80575. TAUCHERT, E. Design and production of counting instruments (electrical). (BIOS Final Rept 138, Item 9) Dec 1946. 29 p. Price: Mimeo-$1.00

Four German factories were visited by a British team of investigators and reports on electrical counters and meters made by the firms are attached. The factories are: Heliowattwerke Elektrizitäts A. G., Berlin-Charlottenburg; Siemens-Halske A. G., Wernerwerk, Siemensstadt; Ludwig Loewe & Co. A. G. (this firm was not manufacturing meters or counting instruments); and Allgemeine Elektrizitäts Gesellschaft (A.E.G.), Berlin. A detailed report is given of a test of A.E.G. type J 6,5 amp meter, giving specifications and general conclusions, together with a report on the A.E.G. synchronous motor. Photographs of the meter and motor and graphs showing the performance of the meter are appended.

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